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Behavioral Economics: Lessons from the Military

by

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ABSTRACT

In this paper, I consider a body of observational evidence not commonly studied by economists, namely the behavior of men and women (mostly men) in the military. I focus here on three issues: first the behavioral foundations for creating an effective military unit; second, evidence that infantrymen have historically been reluctant to fire on the enemy and how this reluctance has been overcome in the last half century through changes in military training, and third, the modern practice and conventions surrounding the taking of prisoners of war. The evidence in all three of these areas reinforces the appeal of the idea of cognitive modularity, the view that thought and behavior are influenced by different "mental organs." With respect to behavior, these usually align in the counsel they provide. But not always, and focusing on circumstances where guidance conflicts – Prisoners Dilemmas are examples – offers a route towards building a more coherent behavioral science.

Behavioral Economics: Lessons from the Military

In a series of publications I have argued that humans are predisposed to solve prisoners dilemmas surprisingly easily, at least compared to what we as economists might otherwise expect. Throwing caution and arguably prudence to the wind, we trust and rely upon each other, and by and large we avoid physically harming each other, even when the appeal of gain or the prospect of insuring against loss might suggest we do otherwise. And we do this even when, as is generally the case among adults, we are not so closely related that these behaviors could be accounted for by kin selection. To be sure, the understandable appeal of defection sometimes wins out, but more often than not, it doesn't, to the collective benefit of the players involved.

These behaviors cannot necessarily be rationalized, as economists often propose, as self serving behavior within a repeated game. We can't assume people are, always have been, and always will be in a repeated game, or at least one with uncertain termination, for the simple reason that most interactions start with the possibility they might end after one play. Defection by one or the other or both will kill any prospect of continuing interaction and may well result, in extreme circumstances in predator species, in the deaths of one or more of the players. If we start with the assumption that people act so as efficiently to advance their own material welfare, we face a challenge. We have to explain how and why humans manage so often to avoid defection in their first (and quite possibly only) encounter.

Sociologists and anthropologists have traditionally attributed this to acculturation, socialization, norms, or institutions, an approach championed in some of my earlier

publications (see Field, 1981, 1984, 1991). This account, although identifying the relevant mechanisms, is nevertheless incomplete. The anthropological-sociological perspective doesn't necessarily conflict with the traditional economists' view that we are inherently (innately) selfish and dangerous to each other, an approach with which it is often contrasted. The explanation of catastrophe prevention is, however, not, as traditional economists would have it, self interest within a framework of repeated games, but rather a "thin veneer of civilization" that prevents us from tearing each other apart. This leaves open such questions as exactly what this thin veneer consists of and why we are so readily prepared both to articulate and be influenced by norms, such as the golden rule, which despair of an instrumental rational.

The "thin veneer "explanation, moreover, poses an evolutionary/historical conundrum. We share a common ancestor with two other surviving chimpanzee species, the common chimpanzee (*pan troglodytes*) and bonobos (*pan paniscus)*. It is almost certain that our ancestor, living roughly six million years ago, as well as his/her progenitors, also exhibited behavioral inhibitions against attacking and killing members of his/her own species (as is true for most animals surviving today). That doesn't mean murder never happened – both common chimps and humans do, after all, kill their own, and our common ancestor may have done the same.

The critical question however is not why this happened and happens sometimes, but why it hasn't been more frequent. Violent human conflict is newsworthy because it is unusual. The relative lack of violence among humans has allowed our numbers to increase to over 6.5 billion, and to populate every continent of the world. The issue is not

so much why humans kill each other, but why this isn't more frequent, and whether the explanation for this is to be found entirely in the realm of culture.

Archeological and anthropological evidence suggests that humans and proto-humans have had capabilities to develop, learn, and transmit culture or norms through familiar mechanisms for perhaps half a million years – that is, roughly since the time of the Lower Paleolithic. The "invention" of culture, which allowed the accumulation and transmission through imitation and teaching of techniques for hunting, the use of fire, and the manufacture of clothing and shelter played a critical role in enabling our ancestors to emerge out of Africa into Asia, Europe, and eventually Australia and North America. These were momentous developments; cultural capabilities are not to be trivialized.

But cultural transmission could not have been the mechanism responsible for our common ancestor (and his and her progenitors) not killing each other off, because our cultural capability arose much more recently. This leads to the following conclusion. Since the inhibitions on violence toward conspecifics that allowed our common ancestor to reproduce predate our cultural capability, their foundation must be to some degree biological. There must be some genetically encoded[1] foundation not just to the aggression we display towards others, but also towards the inhibitions that most of the time prevent us from falling into a Hobbesian war of all against all (Field, 2008b). It must be the case that we inherited them from our common ancestor and the common ancestor's progenitors, and that they reappear from generation to generation through a mechanism that is in part biological, that is, not exclusively cultural.

[1] These inhibitions have a genetic substrate in this sense: my claim is that the human sexual responses that facilitate reproduction of the species are not, by and large culturally constructed, and neither are the predispositions to harming others. There may be cultural variations in these inhibitions and responses, but the basic, species typical predispositions have to do with our genetic heritage.

It is true that these inhibitory predispositions can be and sometimes are overcome, and, as in other behavioral traits, there is variation within the human population in the extent to which individual behavior is governed by them.[2] But again, game theoretic analysis predicts 100 percent defection in a one shot PD game. The issue is not that there is some defection. The issue is why this response is not universal.

This argument has an important implication. Since such inhibitory predispositions could upon first appearance not have been favored by organism level natural selection, anymore than the play of cooperate in a possibly one time PD can be justified as rational, it must have been the case that these predispositions took root in humans as the result of natural selection at levels higher than that of the individual organism. In other words, multilevel or group selection would need to have occurred at the biological and not just the cultural levels.[3]

This argument draws support theoretically from the deficiencies of alternate explanations, and empirically from both experimental and observational evidence. The argument poses a challenge, both for economists and fellow travelers who adopt behavioral assumptions consistent with a narrow reading of rational choice, and for sociologists and anthropologists, for whom culture and socialization are all powerful in imparting the "thin veneer of civilization" which explains human cooperation. If the argument is accepted it will affect our understanding of the human ethogram and more

[2] Recent estimates, based on administrations of the Minnesota Multiphasic Personality Inventory, place the proportion of the U.S. population with sociopathic tendencies at four percent. Relatively few of these people are dangerous killers. Nevertheless, because of their lack of emotional attachment or interest in others, except as instruments, sociopathic individuals are unlikely to anticipate or experience remorse as the consequence of killing others. This makes them well suited for certain military tasks such as service as a sniper. Studies with identical and fraternal twins indicate a sociopathy heritability of between 35 and 50 percent, comparable to that found for other personality indicators (Stout, 2005, p. 122)

[3] The full argument for this is developed in Field (2001) and elaborated upon in Field (2006, 2007, 2008a,b)

specifically how we should advance social and behavioral science. It has special implications for economics, a social science often conducted under the assumption of a particularly constricted version of human rationality, which assumes that humans act in all spheres so as efficiently to advance their material self interest.

In this paper, I consider a body of observational evidence not commonly studied by economists, namely the behavior of men and women (mostly men) in the military. I focus here on three issues: first the behavioral foundations for creating an effective military unit; second, evidence that infantrymen have historically been reluctant to fire on the enemy and how this reluctance has been overcome in the last half century through changes in military training, and third, the modern practice and conventions surrounding the taking of prisoners of war.

All three cases involve altruistic behavior, but only the first involves affirmative acts of assistance, upon which most of the altruism literature has focused. Affirmative acts are only the tip of the iceberg of biologically altruistic behavior, as I argued in Field (2001). The greatest benefit I can confer on you is usually not to harm you. Imagine I am beating you over the head. Think how much better you will feel once I stop doing so. Think how much benefit I have granted you by desisting or by refraining from hitting you in the first place. Cases two and three highlight instances of altruism as refraining from harm.

The behavior of humans in the military supports these hypotheses about species-typical inclinations. First, we are weakly predisposed to provide affirmative assistance to those not closely related to us. But this predisposition can be strengthened through training. Second, we are more strongly predisposed to avoid harming other conspecifics. But this inhibition can be weakened or neutralized with training. The first study – of the

goals, methods, and success of infantry training -- supports the first proposition. Cases two and three show how behavior in combat and its aftermath supports the second.

The evidence in all three of these areas reinforces the appeal of the idea of cognitive modularity, the view that thought and behavior are influenced by different "mental organs" (Barkow et. al. 1992). With respect to behavior, these usually align in the counsel they provide. But not always, and focusing on circumstances where guidance conflicts – Prisoners Dilemmas are examples – offers a route towards building a more coherent behavioral science. This approach is at odds methodologically with how most economists think about decision-making, thought, and behavior. Whereas some economists (e.g., Thaler and Shefrin 1981) have explored the implications of "dual selves", most adopt what political scientists would refer to when talking about governments as a unitary actor approach. And whereas economists (unlike sociologists or anthropologists) are generally not averse to appealing to biological influences on behavior, the appeal usually assumes no selection above the level of the individual organism, in which case Darwin merely backstops narrowly selfish assumptions about human behavior. This approach leads to predictions inconsistent with a wide body of experimental and observational evidence.

1. Loyalty to the Squad

Armies are hierarchical organizations, with clearly defined and articulated components aggregating to higher levels. Armies are commanded from the top down, but they are built from the bottom up. The squad is the smallest organizational unit, a group of eight to eleven soldiers led by a staff sergeant (for some specialized units, such as tanks, the analogous unit is the crew). A platoon combines two to four squads, a

company three to five platoons, a battalion four to six companies, a brigade (group or regiment) two to five battalions (around 500-1500 men), and a division three maneuver brigades along with a combat support brigade. Finally, at the top of the pyramid, a corps combines two or more divisions and an army two or more corps (U.S. Army Field Manual 7-21-13, ch. 2). There is minor variation in the nomenclature used by different nations, but virtually all armies today display a similar structure. For all armies, the basic building block is the squad.

Infantry training aims to blunt, tone down, or contravene individualistic predispositions and instill or strengthen values such as honor, duty, courage, and sacrifice. The emphasis is on sacrifice of self for others. Here are relevant excerpts from the U.S. Army Field Manual, The Soldiers Guide:

> Section 1.15: "The warrior ethos concerns character, shaping who you are and what you do. It is linked to Army values such as personal courage, loyalty to comrades, and dedication to duty. Both loyalty and duty involve putting your life on the line, even when there's little chance of survival, for the good of a cause larger than yourself… Section 1.19: The Army's core values are loyalty, duty, respect, selfless service, honor, integrity and personal courage… Section 1.22: Put obligations in correct order: the Constitution, the Army, the unit, and finally, self.

Although the manual mentions duties toward the nation, the effectiveness of an infantry force depends first and foremost upon the development of bonds of personal loyalty at the lowest level: among members of the squad. Commitments to the Constitution or the nation, or even the political causes underlying the war, are almost always weaker than the trust individual soldiers develop in each other. These bonds are described as often stronger than those that unite husband and wife, perhaps equal to those between parent and child, and if successfully established create what is referred to in military writings and popular culture as a band of brothers. Effective military training,

aside from teaching soldiers discipline, endurance, and various skills, creates an environment in which these bonds take root.

From a practical standpoint, we need to appreciate just how important they are. Members of a squad in combat trust each other with their lives. This is not just a repeated game of I'll cover your back if you'll cover mine. Infantry members face the prospect of injury or death and must be and are prepared to risk their lives, in some cases with 100 percent probability, for the benefit of the group. For example, if a grenade rolls into a foxhole, an infantryman everywhere, depending on proximity, is expected to cover the grenade with his body to absorb the explosive force. Group leaders expect this response, along with many others, to be done without thinking, to be automatic, to be essentially a conditioned reflex, in a manner similar to the fashion in which a Secret Service Agent is prepared without thinking to place him or herself between a bullet and the President.

Obviously, all members of a squad are collectively better off if each "agrees" in advance to fall on the grenade, or to undergo training that will make their behavior in this circumstance automatic. But why, if humans operate so as efficiently to advance their material self interest, which would seem to imply that they prefer life over death, would any rational individual ever agree to this? Why would trainers waste their time talking about honor, duty, and courage? As far as the grenade in the foxhole, if individuals are rational in the sense that they value life over death, it always makes sense to hesitate just a moment and see if George will do it. Training an effective military squad requires not just that soldiers be trained to kill but also that they are prepared to die for each other.

For most soldiers combat is an extraordinarily stressful experience, with fearful participants making split second decisions about the use or force, and having to bear, or (suppress) feelings of personal responsibility for the deaths of their buddies, civilians, and in some cases (particularly in close combat) enemy soldiers. In the First World War, a U.S. soldier had a greater probability of becoming a psychiatric casualty than being killed in combat. In efforts to prevent such high casualties from this source in the Second World War, military psychiatrists, working from a model that suggested some types of personalities were more prone to break down than others, tried to keep susceptible individuals out of the military. The effort failed, and the consensus today is that such prescreening is largely a waste of time.[4] For a soldier engaged in combat, the question is not if but when he or she will break down.

One can however influence how long it takes before this happens. Research conducted during World War II showed "that a major element in preventing battle shock was rooted in the strong peer attachment that members of combat groups formed with one another" (Gabriel, 1987, p. 120). Strengthening squad loyalty, as well as providing periods of rotation away from the fighting, are key ingredients in lengthening the time an individual soldier can be expected to fight effectively.

A survey of veteran Israeli Defense Force Platoon and Company Soldiers and Officers reinforces this point and confirms how important squad loyalty and the respect of peers is in enabling soldiers to hold themselves together. Respondents were asked to identify "The Most Frightening Aspects of Battle." Among soldiers other than officers or senior NCOs, the fear of letting comrades down topped the list, at 40.4 percent, followed

[4] Of 15 million men screened, somewhere between 1.1 and 1.9 million were rejected for psychiatric reasons. Most of these screenings took less than two minutes and were done by physicians with no psychiatric training (Hale, 1995, p. 188, cited in Barber, 2008, p. 71).

by loss of limb or injury (26.7 percent), which was more feared than death (20.7 percent). The fear of not living up to the expectations of squadmates was cited by combat veterans almost twice as frequently as the prospect of death. In contrast, the fear of letting country down was identified by only 1.1 percent of respondents (Shalit, 1988, p. 11). Swedish soldiers not exposed to combat had greater fear of death, but after they had experienced combat, their fear decreased. Those who have fought preferred death to serious injury, which is in turn preferred to letting down members of one's squad. Individuals with these preferences will in fact roll onto a grenade in a foxhole.

The fundamental importance of squad loyalty is reflected in Army Field Manual 7-21-13, The Soldiers Guide. The manual starts by identifying the warrior ethos with "the soldier's selfless commitment to the Nation, mission, unit and fellow soldiers (ch. 1.7) It goes on to observe that the soldier who jumps on a grenade to save his comrades is courageous (ch. 1.12). But in section 1.13 it gets to the heart of the matter: "Soldiers fight for each other; they would rather die than let their buddies down." Although the manual goes on to talk about this loyalty extending "front to rear as well as left and right" the text reflects an implicit acknowledgment that loyalty to fellow squad members is the bedrock.

Infantry trainers pride themselves on their ability to "break down" and then "rebuild" the recruit in the Army's or Marine's image. While training is hard work and results may vary, drill sergeants give themselves too much credit when they fail to acknowledge the fertile ground they plow. Their success is in part testimony to the fact that humans are differentially prepared to receive this "instruction." What is striking from an evolutionary perspective that would restrict selection to levels no higher than the

individual organism, or from a rational choice perspective that assumes that people are narrowly selfish, is that these bonds develop at all.

Note that in comparing squad member loyalty to parent – child or sibling bonds, we reference individuals who share half their genetic makeup. One need not appeal to higher level selection to understand why individuals might be prepared to sacrifice for their children or even for their siblings. The problem, of course, is that members of military squads are not, in most cases, actually siblings. They may see themselves as a band of brothers, but they are not actually brothers. Why, then, do recruits so readily accept these values, and how is it so relatively easy for trainers to forge men into squads whose members are prepared not just to kill the enemy, but to give their lives for each other?

It is true that it is easier to do this with younger recruits and among individuals who already have strong ties of affinity to each other. During the Civil War, for example, US military units were organized and named on a state basis. In World War I the British, Germans, Canadians, and French all raised regiments from single counties, and the Germans continued to do so during World War II. (Gabriel, 1987, p. 103). Military organizers justified racial segregation in the US military along similar lines.

But the issue here is not the role that the distribution of age, race, or locality of origin of members of the group may play in the ease with which these bonds can be fostered. The issue is that they can be forged at all. Progress in the United States in integrating the armed forces, both racially and regionally, shows that with the right leadership and training, these bonds can develop among men who are not siblings or close cousins, and are from quite different ethnic, racial, and regional backgrounds.

If squad members were very closely related we could explain some of this through Hamiltonian kin selection (Hamilton, 1964). But they are not. The loyalty that develops is an acute example of the relative ease with which humans develop trust and relations of reciprocity among unrelated individuals. To describe these bonds as emerging relatively easily is not to downplay the forces that threaten to disrupt them – for humans are calculating individuals, and our prefrontal cortex understands the nature of prisoners dilemmas, and the merits of the strictly dominant strategy of defection. Just as there are forces that constantly threaten to undermine an economic cartel, there are forces that threaten the bonds among members of a squad. But the prediction of an economic model based on a narrow version of rationality is that neither cartels nor effective military squads should ever form. Again, embedding the problem in an environment of repeated play begs the issue: one has to explain why the first iteration doesn't become the last.

2. Firing on the Enemy

If it turns out to be easy, all things considered, to take unrelated individuals and mold them into a squad prepared to trust each other with their lives, it turns out to be remarkably difficult to get them to fire on the enemy. That men are prepared, given state sanction for violence, to kill other men, will hardly be surprising to economists. What is astonishing is the evidence of how hard it is to get them to do so, particularly in close combat.

In 1947, S.L.A. Marshall published Men Against Fire, in which he made the astonishing claim that in infantry companies in the Second World War the rate of firing rarely rose above 15 - 20 percent. Even for well trained troops with combat experience

Marshall concluded that the firing rate never rose above 25 percent.[5] Marshall argued that "the average and healthy individual… has such an inner and usually unrealized resistance toward killing a fellow man that he will not of his own volition take life if it is possible to turn away from the responsibility." He thought moreover that the relief felt by US troops when they went into a quiet sector "was due not so much to the realization that things were safer there than to the blessed knowledge that for a time they were not *under the compulsion to take life"* (1947, p. 79).

Marshall stated that he had interviewed "approximately four hundred infantry companies in the Central Pacific and European Theatres." Battalion, company, and platoon commanders made no attempt to ascertain what percentage of their men had actually fired a weapon at the enemy, simply assuming, and averring, that it must have been close to all of them. But when Marshall drilled down, he claimed to have discovered a different story:

> … when the companies were interviewed at a full assembly …we found that on an average not more than 15 percent of the men had actually fired at the enemy positions or personnel with rifles, carbines, grenades, bazookas, BARs (Browning Automatic rifles), or machine guns during the course of an entire engagement" (Marshall, 1947, p. 54)…. The thing is simply this, that out of an average one hundred men along the line of fire during the period of an encounter, only fifteen men on average would take any part with their weapons (Marshall, 1947, pp. 54, 57).

Moreover, said Marshall, it was impossible in advance of battle to know which soldiers would comprise that 15 percent. Commanders claimed that loyalty and obedience in drill enabled them to predict performance in battle. Marshall flatly denied

[5] He was blunt: "I mean that 75 percent will not fire or will not persist in firing against the enemy…" (1947, p. 50).

this (p. 60), maintaining that performance in drill was a poor predictor of what would happen under battle conditions.

Marshall was not a philosopher trying to demonstrate the inherent goodness or morality of humans. He was a military officer, and this low rate of nonfiring was a *problem* he was intent on overcoming. As he wrote, "What we need in battle is more and better fire. What we need to seek in training are any and all means by which we can increase the ratio of effective fire when we have to go to war" (Marshall, 1947, p. 23).

Although Marshall's 1947 work received wide attention, and is still frequently included on military reading lists, it was vigorously attacked in the late 1980s on the grounds that, among other misrepresentations, he exaggerated the number of interviews conducted (Smoler, 1989).[6] Marshall's grandson, whom S.L.A. Marshall had disowned when the younger Marshall became a conscientious objector during the Vietnam conflict, concluded, based on his own research and interviewing, that some of these allegations were probably true (Marshall, 1995). But he also concluded that S.L.A. Marshall's basic generalizations about firing rates were probably correct (see also Grossman, 1995; Holmes, 1985, p. 58).

Why were critics so upset? Although members of the military greeted the book warmly when it was published in 1947, four decades later some came to see the allegation of low firing rates as a calumny on American servicemen. Again, this was not the reaction when the book first appeared, and the Army took Marshall's findings very seriously, changing its training methods in ways that resulted in, or at least were associated with, much higher firing rates in the Korean and Vietnam conflicts.

[6] For bibliographical references to the critical literature, see Chambers (2003).

Marshall did not argue that the 80 percent of nonfirers were cowardly. They were often prepared to carry ammunition, go to the assistance of wounded, or carry messages, activities that in some instance could put them in more peril than those who were firing. And they were prepared to stand their ground and face death as readily as their more aggressive comrades. Apparently, they simply had powerful inhibitions against killing other people which military training, at least as it was practiced up to that point, had been unable to overcome. Marshall also argued that a study of psychiatric casualties in the European theatre showed that "fear of killing rather than fear of being killed was the most common cause of battle failure in the individual" (p. 78).

Bourke (1999, pp 238-46) articulates a contrary view, suggesting that soldiers rarely had or have any problem killing, and that fear of dying was the main cause of psychiatric casualties. In the aftermath of the First World War, with its high rate of psychiatric casualties, Bourke's position was the accepted explanation for why men cracked. The equation of fear of death with breakdown underlay part of the case for bombing civilian populations during World War II. Expose civilians to the reality and fear of death experienced by infantrymen, went the argument, and noncombatants would become psychiatric casualties at the same rate as combat soldiers.

This did not happen. London, of course, was repeatedly bombed and in Hamburg in July of 1943, at least 50,000 civilians died and a quarter million houses were destroyed in a firestorm ignited by RAF aerial bombardment. Residents of Dresden and Tokyo received similar treatment months before the atomic bombing of Hiroshima and Nagasaki. But there is little evidence the strategy had the desired effect in Britain, Germany, or Japan. The consensus of military historians is that aerial bombardments of

population centers failed in their objectives.[7] Morale did not deteriorate, and civilians subjected to aerial bombardment did not suffer increased rates of breakdown. How are we to explain this failure of air power (terror bombing)? One interpretation is that although civilians faced death, unlike combat soldiers, they did not have to struggle with the onus of killing others.

Consistent with this view, Navy personnel rarely suffered breakdown: sailors didn't have to kill anyone directly, and no one personally targeted them. Similarly, medics faced the same or even higher risks of death as regular infantrymen, but experienced few psychiatric casualties. They too didn't have to kill. Perhaps there was self selection of certain personality types resistant to breakdown into the Navy or the medical corps. But this argument runs up against the view, increasingly accepted, that the continuing experience of close range ground combat will eventually break anyone (Gabriel, 1987). Economists might be receptive to the argument that soldiers will pursue a psychiatric diagnosis when they can benefit from it, and if such a diagnosis offers a ticket to safety away from the front, it would naturally be pursued by those who fear death. But the evidence indicates that soldiers presented themselves at medical stations with psychiatric complaints even when the station was more exposed to danger than their previous position (Grossman, 1995, p. 59). Consistent with the view that most people have difficulty or are conflicted about killing at close range is the practice of randomly providing one man in a firing squad with a blank cartridge.

What was the explanation for this inhibition on killing that led to such low firing rates? On one reading, Marshall accepted a conventional cultural account:

[7] An exception might be made for the atomic bombings of Hiroshima and Nagasaki in 1945 which ended the war with Japan.

> (The American soldier) is what his home, his religion, his schooling and the moral code and ideal of his society have made him. The Army cannot unmake him. It must reckon with the fact that he comes from a civilization in which aggression, connected with the taking of life, is prohibited and unacceptable…. This is his great handicap when he enters combat. It stays his trigger finger even when he is hardly conscious that it is a restraint upon him (p. 78).

But the references to the unconscious nature of the restraint, and of the inability of the Army to "unmake" the recruit, suggest deeper roots for the inhibition and also some pessimism regarding the challenge of overcoming the problem he had identified. Although Marshall talks in this passage as though this is an American "problem," he made it clear elsewhere in the book that low fire ratios afflicted our adversaries as well – to varying degrees. My own interpretation is that what military trainers have struggled with is a more or less universal human aversion to the close range killing of other conspecifics, an aversion with biological as well as cultural roots.[8] To say that this is more or less universal is to say that it is observed across cultures, but also to acknowledge that, with respect to this trait as well as many others, there are variations among individuals in the strength of the predisposition. It is also to acknowledge that effective conditioning can largely suppress the inhibition (as reforms in military training undertaken in response to Marshall's writings have confirmed) and that even in the absence of explicit conditioning, there are circumstances that will defeat it.

Other evidence

It seems evident, based on the criticism of his work, that Marshall's research methodology was more informal than he allowed, and that his norms were closer to that

[8] Grossman summed up his basic argument: … the vast majority of the rifle and musket armed soldiers of previous wars were consistent and persistent in their psychological inability to kill their fellow human beings. Their weapons were technologically capable, and they were physically quite able to kill, but at the decisive moment each man became, in his heart, a conscientious objector who could not bring himself to kill the man standing before him (1995, p. 27).

of a combat journalist than an academic historian or a social scientist. But it is, I think, a mistake to question his basic conclusion. If we do, we must also account for a large body of other evidence consistent with the view that, prior to the second half of the twentieth century, the problem of low firing rates was endemic in military conflict.

After Gettysburg, 27,574 muskets were recovered from the battlefield. Of these, roughly 24,000 were loaded and ready to fire. 12,000 had been (improperly) loaded more than once and of those, 6,000 had had 3-10 rounds rammed down their barrels. One weapon had been loaded 23 times (Lord, 1976). Civil War soldiers used rifled, muzzle loading muskets with explosive force provided by black powder. With training, infantrymen could reload these weapons quickly. The soldier bit open a paper cartridge, poured powder into the muzzle, followed this with a minié bullet, which he drove home with a countersunk ramrod. A percussion cap ignited the charge. The weapons, mostly Springfield and Enfield rifles, were relatively accurate, certainly more so than smoothbore muskets, and their large caliber bullets produced devastating wounds when they hit home.

A well trained solider could expect to get off 4 or 5 shots a minute. In drills soldiers spent five percent of their time firing; the remainder was consumed by the loading process. As Grossman notes, if most soldiers were attempting to load and fire as fast as they could, then 19 times out of 20 they should have fallen with a weapon not ready to be fired. Moreover, a fallen comrade's loaded, cocked, and primed weapon would have been taken up by a survivor and fired (Grossman, 1995, p. 22). In light of this, the number of unfired weapons recovered from the battlefield is truly surprising. The thousands of rifles with multiple charges indicate that many, many soldiers went through

the drill of loading, then neglected or chose not to fire, and then commenced again with the reloading process.

In the eighteenth century, the Prussian army conducted experiments in which a battalion of infantry fired smoothbore muskets at a target 100' by 6', designed to simulate an opposing infantry battalion (smoothbore muskets were less accurate than the rifled Springfields or Enfields used in the Civil War). At 225 yards, one out of four shots fired by the Prussian soldiers hit their mark. At 150 yards this rose to 40 percent, and at 75 yards to 60 percent.

The Prussian studies indicate a 60 percent hit rate at 75 yards. Facing off against a 200 man battalion at 75 yards, 120 men on each side should have been hit in the first volley. Since it is generally agreed that the effectiveness of a combat unit often distintegrates at the 50 percent casualty rate, such withering fire should have ended battles quickly. And yet the historical evidence indicates both that these battles typically went on for several hours and sometimes days and that typically only *one or two men per minute* died in exchanges between battalion strength units (Griffith, 1989). High casualty rates were apparently the result not of intense and effectively aimed fire, but of the fact that battles persisted for a long time (the introduction of artillery fire could also raise the fatality rate). Obviously, even at a kill rate of 1-2 per minute, hundreds or even thousands of men could die over the course of such a battle.

For example, the battle of Antietam in 1862 during the American Civil War killed almost 6,000 soldiers (US Army Field Manual 7-21-13, 2003, ch. 2). But the battle lasted 12 hours, which means men were dying at a rate of "only" about 8 per minute. The battle was certainly bloody, but the casualties resulted from the length of the battle, not a

potential rate of killing using rifled muskets at close range that was much higher. Estimates of casualties in the Battle of Gettysburg vary, but again, it appears that total deaths over the three day period were in the range of 6,000. Assuming 12 hours of fighting per day, this works out to under 3 men per minute killed (four or five times as many men experienced wounds, of varying severity.)

A study conducted in 1986 by Britain's Defense Operational Establishment collected data on the weapons used in one hundred nineteenth and twentieth century battles and then used a high tech version of laser tag to measure potential killing rates. They found that these rates were far higher than actual combat performance, consistent with the other data cited here (Grossman, 1995, p. 16). Additional data points in the same direction. The nineteenth century French military officer Ardant du Picq noted that in all his years of combat, Alexander the Great suffered only 700 battle fatalities. Richard Holmes claims that troops under the command of General George Crook fired 25,000 rounds against the Sioux and Cheyenne at Rosebud Creek on June 16, 1876. Yet casualties on neither side in this battle rose above the double digit level.

Or consider the battle of Wissembourg, the first of the Franco-Prussian War, on August 4, 1870. The French General Guillaume Bonnal subsequently analyzed the ratio of hits to rounds fired. The Germans, firing against the French, spent 80,000 rounds to hit only 400 French defenders, a result that can be partly attributed to the fact that the French were dug in behind fortified positions. The outnumbered French defenders, however, fired 48,000 rounds against Germans *who were advancing across open ground* and struck just 404 of them, for a hit to fire ratio of 1:119. The actual ratio was probably considerably lower, since many of those casualties were from artillery fire

(Holmes, 1989, p. 168). Holmes attributed this low ratio to rifle inaccuracy. But this seems implausible, given the baseline eighteenth century Prussian tests using smoothbore muskets.

An alternative explanation is simply that many men aimed high. The natural human tendency to aim high partly explains why guerilla forces have been relatively unsuccessful in the second half of the twentieth century, when faced with infantry trained and drilled using new methods which largely suppress it.

The historical problem from a military standpoint was that, when faced with live opponents at close range, a significant number of soldiers reverted to a posturing mode in which they fired over the heads of their enemies. An even larger majority simply did not fire. For many soldiers, aiming high was the right thing to do: posture and huff and puff, make a lot of noise, with the aim of intimidating the enemy to retreat. This they did in spite of what had been practiced in drill. As Grossman (1995, p. 87), put it, "The resistance to the close range killing of one's own species is so great that it is often sufficient to overcome the cumulative influences of the instinct for self protection, the coercive forces of leadership, the expectancy of peers, and the obligation to preserve the lives of comrades."

The accuracy and firing rate of the longbow was far superior to that of the smoothbore musket that replaced it. The conventional wisdom is that the longbow – without question an impressive weapon -- was supplanted because the human capital requirements to become proficient with it were so much higher. But Grossman suggests another reason. The musket made a lot more noise, and was thus much better suited to posturing.

Grossman argues that the standard dichotomous behavioral choice (fight or flight) suggested by psychologists as applying to humans under stress is too limited. Indeed, for both humans and animals, he suggests, it is a choice between fight, flight, *posturing, or submission*. Most conflicts between animals of the same species do not in fact end in death, but in the equivalent of chest beating exercises designed to intimate the opponent and get him or her to withdraw or submit (as when a dog rolls over and exposes its vulnerable stomach).

Konrad Lorenz noted that piranhas and rattlesnakes will bite almost anything, but when piranhas fight among themselves they do so with taps; while rattlesnakes wrestle each other. Lorenz placed great emphasis on posturing, mock battle, and submission processes which he thought were vital to species survival. The equivalent of posturing in conflicts between infantry battalions is firing over the heads of the enemy, a tendency noted by Ardent du Picq. Lieutenant George Roupell who commanded a British platoon in World War I, recalled walking down the trench with sword drawn "beating the men on the backside and, as I got their attention, telling them to fire low" (Grossman, 1995, p. 12). Primitive New Guinea tribesmen, when they went to war, took the feathers off their arrows to make them less accurate and deadly even though they were excellent shots with bow and arrow.

The problem of low firing rates also applied to close range aerial combat. During World War II less than 1 percent of fighter pilots became aces (more than five kills), and they accounted for 30- 40 percent of all enemy aircraft destroyed. Most fighter pilots "never shot anyone down or even tried to" (Dyer, 2005, p. 57). To rectify this the US Air

Force engaged in a screening program to try and select for fighter pilot training from among the portion of the population with sociopathic tendencies (Grossman, 1995, p. 30).

Both Marshall, and those such as Grossman who continue to view his work sympathetically, agree that there were certain circumstances where the inhibition to fire and kill was much more likely to be overcome.[9] First, when the weapon, such as a machine gun, was *crew serviced*, then the sense of responsibility towards one's partner overcame reluctance to fire and fire persistently. As Marshall wrote, "Men working in groups or teams do not have the same tendency to default of fire as do single riflemen. This is such a well fixed principle in human nature that one very rarely sees a gun go out of action simply because the opposing fire is too close" (Marshall, 1947, pp. 75-76). Second, inhibitions against killing decline dramatically with distance – both physical and "moral" -- from the target.[10] Thus artillery and bomber crews rarely had difficulty taking action which killed other humans. And the "problem" of non-firing was virtually nonexistent in the Navy, where one fired at ships or planes (not the people in them). Nor did the problem tend to afflict snipers, who killed from great distance. The main problem was the individual infantryman engaged in close range combat.

Predispositions against killing at close range would have been favored by group level selection in the environment of evolutionary adaptiveness (EEA). Neither crew

[9] I have placed considerable reliance on Grossman and Marshall, not because I believe they are correct in all particulars, but because the case they make, considered in its entirety, persaudes. On Marshall's likely exaggeration of the number of interviews he undertook, see below. Nor is Grossman entirely reliable. Grossman cites Holmes to place the battle of Rorke's Ridge in 1897 (it was actually 1879) (p. 12). And Grossman claims that "in most wars from the time of Napoleon on down to today, it was not the infantry but the artillery that inflicted most of the casualties." This may well be true for the twentieth century, but Drew Gilpin Faust points to evidence suggesting it was not for the Civil War. Citing Adams (1952), she states that 94 percent of Civil War wounds were from bullets, 5.5 percent from artillery, 0.4 percent from saber or bayonet. Source: George Worthington Adams, *Doctors in Blue: The Medical History of the Union Army in the Civil War (New York: Henry Schuman, 1952*) p. 113

[10] Conditioning could create or reinforce other types of distance (such as racial, ethnic, or religious) between combatants. This could also raise firing rates.

serviced weapons, which achieve higher fire rates by exploiting group loyalty and fear of letting down one's buddy, nor the ability to kill at great distance using advanced weaponry, would have been anticipated in that environment. Thus there is less reason we would have developed hard wired inhibitions against killing under those circumstances.

This is consistent with Konrad Lorenz's nuanced position with respect to human aggression. Lorenz provided much evidence of how inhibitions against harming other conspecifics were common among animals, and generally stronger among predator species with more potential for harm. He acknowledged that humans had inherited some such inhibitions from their forebears. At the same time, he articulated something close to a "thin veneer" position that it was only civilization and culture that protected us from destroying ourselves. His pessimism was based on the view that technological advances in weaponry made us more dangerous to each other than we were in the EEA, and that our culturally evolved potential for harm had outrun our evolutionary evolved restraints on such harm (Lorenz, 1966).

A final circumstance, historically, in which inhibitions on taking life typically weakened is when an opposing force broke rank and fled. Clausewitz asserted that most of the casualties in battle took place after one side had won (1909, Book IV, ch. IV). Just as it is generally a bad idea to run from a potentially dangerous animal in the wilderness (stand your ground) it is also extremely dangerous for soldiers to retreat from their opponents. For whatever reasons, perhaps the lack of inability to see faces when soldiers turn tail, this appears to be a circumstance which is strongly disinhibiting. The importance of direct exposure to the faces of potential victims is reflected in the advice Holmes offers to surrendering soldiers: drop your weapon, but also remove your helmet

(which is equivalent to the submission displayed when a dog exposes this abdomen as an act of submission). This may not keep you from being killed (the act of surrender is extremely dangerous; see the next section on the taking of POWs), but paradoxically may improve your survival chances. Similarly, an Israeli study shows that if you are kidnapped it is much more probable you will be killed if you are hooded or blindfolded (Miron and Goldstein, 1979). Related to this, in some conflicts a systematic dehumanizing of the enemy so that they are perceived as not really human can be disinhibiting.

What types of changes in basic training rectified the problem of low firing rates? The major innovation was in marksmanship training. The military exploited Skinnerian operant conditioning methods to more effectively overcome the human inhibitions that led to low firing rates. Up through the Second World War, such training was conducted on a known distance (KD) range in which soldiers practiced hitting paper targets at various fixed distances. Army and Marine trainers replaced this with courses in which recruits donned full combat gear, sat in foxholes, and faced lifelike targets popping up unexpectedly at unpredictable distances. If you "dropped" one, it literally dropped. You got immediate gratification, much as in a modern day POV video game. The intent was, in a more realistic combat setting, to make firing an almost automatic response to the appearance of a target.

Secondly, there was now, on average, considerably less delicacy in regard to the reality that a major duty of the soldier was to kill. Authors such as Dyer, Holmes and Grossman report that in basic training of Marine and Army recruits, there was much more glorification of killing, which was "almost unheard of in World War I, rare in World War

II, increasingly present in Korea, and thoroughly institutionalized in Vietnam" (Grossman, p. 252). Much more so than in previous contacts, soldiers learned that their goal was to kill, not just to be brave or to fight well. Training ingrained a 'quick shoot' reflex and left soldiers, at least in the short run, much less conflicted about what they had to do and had done. A combination of desensitivization – targeted efforts to generate contempt for the enemy -- along with both classical and operant conditioning, raised the fire rates, according to Marshall's subsequent work, from 15-25 percent in World War II to 55 percent in Korea, to 90 percent in Vietnam.

Psychiatric casualty figures were substantially lower in Vietnam than in previous conflicts. Partly this was due to the fact that aside from a few set battles, combat intensity was much lower. Units went on patrol and the Viet Cong generally avoided them. Casualties occurred in ambushes, which were short, if bloody, fire fights. Relatively few soldiers were actually involved in combat, and the army made major efforts to supply comforts of home. For a variety of reasons, however, Vietnam vets experienced higher rates of psychiatric disturbance when they returned home, so raising fire rates by suppressing the conflicts associated with killing may have delayed but not prevented psychological reckoning.

The changed training methods, however, clearly gave armies that adopted them an edge in combat. Prior to the Falklands War, for example, British troops had received new style training; Argentineans had not. British veterans attributed their success to higher fire rates and less firing over the heads of the enemy on their part. Again, the problem of low fire rates and aiming high did not afflict crew serviced Argentinean weapons, such as machine guns (Grossman, 1995, p. 175).

The relative success of counterinsurgency forces against guerillas in the last half of the twentieth century can also be attributed less to weaponry advantage and more to higher and better aimed fire achieved through the new training. Aside from Castro in Cuba, the American defeat in Vietnam (which in the end involved a full scale invasion by North Vietnam troops) and until relatively recently the Tamil Tigers in Ceylon, after mid-century, guerilla movements mostly suffered defeat. In Rhodesia in the 1970s, counterinsurgency forces had an 8:1 superiority in their kill rate vs guerillas, even though they had little advantage in weaponry and no air or artillery support. Commando units had a kill ratio superiority of 35:1 or 50:1. As Grossman puts it, "the.effectiveness of modern conditioning techniques in battle is irrefutable, and their impact on the modern battlefield is enormous" (1995, p. 179).

3. Prisoners of War

The U.S. Army Field Manual 7-21-13, ch. 1, section 1 (2003) defines appropriate military action as the "disciplined use of legally sanctioned force," a definition that divides killing by armed forces into that which is legal and that which is not. The latter category consists of war crimes. The distinction has proved problematic both for pacifists, who may view all war killings as crimes, and some soldiers and veterans, who take a jaundiced view of military justice, and may subscribe to the view that all's fair in (love and) war.

The issue of killing surrendering soldiers, those wounded and unable to continue to fight, or noncombatants is particularly emotionally charged, especially among veterans. When Lieutenant William Calley was found guilty of violating Article 118 of the Uniform Code of Military Justice (murder) as a result of actions in the My Lai massacre,

he was sentenced to loss of all pay, dismissal from the army, and life imprisonment at hard labor. Many veterans protested vigorously, and Richard Nixon ordered Calley's sentence commuted to house arrest. He served barely three years before being paroled. Calley justified killing women and children on the grounds that children were future Vietcong soldiers and more were or soon would be growing inside Vietnamese women (Bourke, 1999, pp. 162-3). Calley's rationalizations – his actions and those of his men were reducing future threats to U.S. forces -- are more extreme than those justifying the killing of surrendering soldiers, but both reflect a style of reasoning that shows how far the logic of defection in a Prisoner's Dilemma can take one.

Why do armies take Prisoners of War? There are many reasons not to. They must be fed, guarded, and transported. They reduce the effectiveness of the capturing military unit. The prisoners may success in escaping, returning to their own lines, possibly with valuable intelligence about the strength, capabilities, and intentions of the capturing unit. Even if transported back to rear lines or the home country, prisoners impose an economic burden associated with feeding, housing, clothing, and guarding them. In most respects, unless the Prisoners are to be exploited for slave labor or used for mine clearing (the Geneva convention prohibits the former and allows the latter only if done voluntarily), or in unusual cases where they may have valuable intelligence, possibly be converted to double agents for espionage purposes, used for propaganda purposes or as bargaining chips in prisoner exchanges, they, are from the standpoint of the capturing unit, better dead than alive.

There are two common arguments appealing to the self interest of the capturing party as to why POWs should be kept alive. First, it is argued, the knowledge that POWs

will be treated humanely increases the probability that enemy combatants will surrender rather than fight to the death.[11] Second, decent treatment of enemy POWs encourages similar treatment of members of one's own forces who are captured.

The problem with both of these arguments is that an army's reputation for providing quarter is based on many interactions. Massacring a relatively small number of prisoners in a remote encounter is unlikely to have any measurable effect on that reputation. Similarly, the direct linkage between how one treats an enemy's POWs and how you or your compatriots will be treated if captured is difficult to sustain logically. The golden rule – do unto others as you would have others do unto you – is a wonderful and almost universal ethical principle – but it is simply not one that admits of an easy instrumental rationale. Again, it is not an adequate solution to embed the interaction in a series of repeated games. Many of these encounters might well end up as being one time, particularly if the surrendering soldier is killed. And it almost always makes more sense from a narrowly rational perspective – a perspective concerned with military victory and preserving one's own life and the lives of those one cares most about, to kill POWs. I am not saying that prisoners should be killed. I am saying that in many instances instrumental rationales for keeping them alive fail.

There is abundant evidence that disposing of Prisoners of War by killing them is in fact frequently the choice made by individual soldiers and in some cases military units. Dyer (2005), Bourke (1999), Grossman (1995) and Holmes (1985) detail many instances of such behavior. Soldiers and units have taken pride in the fact that they grant no quarter, viewing it as a mark of their toughness. In business, a "Take No Prisoners"

[11] Grossman, for example, writes that "The close range murder of prisoners and civilians during war is a demonstrably counterproductive action. Executing enemy prisoners stiffens the will of the enemy and makes him less likely to surrender." (1995, p. 199).

attitude is frequently glorified metaphorically as reflecting a hard nosed, realistic approach to getting ahead. In most instances the rational course of action for a self interested soldier or commander when faced with surrendering soldiers is to kill them. The brutal reality is that POWs reduce the effectiveness of a fighting force. They must be fed, housed, and guarded, and they threaten the mobility of a unit.

The argument that the expectation that prisoners will be shot will reduce the willingness of other enemy soldiers to surrender faces this problem. Such an expectation is formed from a large range of data points, some possibly accurate, some inaccurate. An enemy considering surrender often has no idea to whom he will be surrendering, and the decision to kill POWs is likely to have a very small, if infinitesimal effect on the expectations of other enemy soldiers met at random. In an extensive and fluid war, the large numbers problem means that a commander's behavior in this particular instance is unlikely to affect the expectation of being given quarter, which is formed as the result of reports or rumors from many different instances. Moreover, the propensity of enemy forces to show mercy is unlikely to be affected by the behavior of one commander in one skirmish. Moreover, religiously refraining from killing POWs, even if this accurately influences the unit's reputation and is widely known, provides no guarantee similar actions will be practiced by the enemy. The act of granting quarter may be treated disdainfully by an enemy, or interpreted as evidence of insufficient toughness. In game theoretic terms the knowledge or expectation that your counterparty will cooperate does not affect the strict dominance of the strategy of defect a Prisoner's Dilemma. In fact it makes it more attractive.

My concern in this paper is not whether war has or has not become more civilized over time. Nor am I particularly concerned about what factors influence the propensity to give quarter. I am rather interested in why prisoners are taken at all. Although the killing of surrendering soldiers is frequent, so too has been the taking of prisoners, and not just in small numbers. In World War 1 approximately eight million soldiers surrendered and were held as POWs. During World War II, almost twice as many entered that status, with more than ten million Germans alone becoming Prisoners of War (Wikipedia, 2009).

Those who pride themselves on taking a hard headed, realistic, no-nonsense approach to war, human aggression, and conflict find themselves pressed into contorted positions relative to the practice of and cultural support for taking prisoners. Such individuals are prone to dismiss the Geneva conventions and other humanitarian practices as naïve and dangerous, and in practice may simply ignore them. But this is usually done privately, since for reasons that remain puzzling or inexplicable to such individuals, the killing of surrendering or surrendered personnel is considered a war crime. Those who believe that all's fair in love and war have difficulty with the very concept of a war crime and the idea that there are "laws of war" but are usually reluctant openly to advocate actions which some stigmatize as war crimes.

One is struck, for example, by Clausewitz's treatment of the issue. Clausewitz had little patience with those who believed that gentlemanly restraint or international treaties could "civilize" war, referring to their impact as "almost imperceptible" and "hardly worth mentioning":

> Violence arms itself with the inventions of Art and Science in order to contend against violence. *Selp-imposed restrictions, almost imperceptible and hardly worth mentioning, termed usages of international law, accompany it without essentially impairing its power* (ch. 1 sec. 2). … *for in such dangerous things as*

> *War, the errors which proceed from a spirit of benevolence are the worst* (ch.1. sec 3) (my italics)

Clausewitz saw the roots of war in the "instinctive hostility" of humans toward each other, although he added "hostile intent" as a more pragmatic cause of conflict, one perhaps less rooted in the emotions (ch. 1, sec 3). In the following passage, he tries to acknowledge the reality that there were, in nineteenth century Europe, "laws of war" while at the same time denying emphatically that they in any real way lessened the barbarism of conflict:

> Therefore, if we find civilised nations do not put their prisoners to death, do not devastate towns and countries, this is because their intelligence exercises greater influence on their mode of carrying on War, and has taught them more effectual means of applying force than these rude acts of mere instinct. The invention of gunpowder, the constant progress of improvements in the construction of firearms, are sufficient proofs that the tendency to destroy the adversary which lies at the bottom of the conception of War *is in no way changed or modified through the progress of civilisation*. Ch. 1 sec 3) (my italics)

He suggests that there is an instrumental rationale for the taking of prisoners or the attempts to spare civilian casualties, but makes no real attempt to fathom or spell out its logic. At the same time, perhaps correctly, he suggests that there has been no real progress in moderating the barbarity of war. Certainly, the mass killing of civilian populations through aerial bombardment in the Second World War provides support for this view. That said, again, millions of surrendering soldiers during the twentieth century asked for and received quarter.

I conclude this section with discussion of sections from the Instructions to the Armies of the United States during the Civil War (1863):

> Art. 60. It is against the usage of modern war to resolve, in hatred and revenge, to give no quarter. No body of troops has the right to declare that it will not give, and therefore will not expect, quarter; but a commander is permitted to direct his troops to give no quarter, in great straits, when his own salvation makes it impossible to cumber himself with prisoners.
>
> Art. 61. Troops that give no quarter have no right to kill enemies already disabled on the ground, or prisoners captured by other troops.
>
> Art. 62. All troops of the enemy known or discovered to give no quarter in general, or to any portion of the army, receive none.
>
> Art. 63. Troops who fight in the uniform of their enemies, without any plain, striking, and uniform mark of distinction of their own, can expect no quarter.
>
> Art. 64. If American troops capture a train containing uniforms of the enemy, and the commander considers it advisable to distribute them for use among his men, some striking mark or sign must be adopted to distinguish the American soldier from the enemy.
>
> Art. 65. The use of the enemy's national standard, flag, or other emblem of nationality, for the purpose of deceiving the enemy in battle, is an act of perfidy by which they lose all claim to the protection of the laws of war.
>
> Art. 66. Quarter having been given to an enemy by American troops, under a misapprehension of his true character, he may, nevertheless, be ordered to suffer death if, within three days after the battle, it be discovered that he belongs to a corps which gives no quarter.

These elaborate rules – which differ somewhat from those in force today -- specify and govern the conditions under which surrendering soldiers were to receive quarter (in other words, conditions in which they were not to be killed). They represent part of what was meant, at the time of the Civil War, by the "disciplined use of legally sanctioned force." Although in general, no unit had the right to announce it would give no quarter, commanders were allowed an exception if taking of prisoners would threaten the capturing unit's own survival. Even so, units not granting quarter could not kill disabled enemies or prisoners taken by other units. On the other hand, if an enemy unit gave no quarter, then it could expect none (the issue of distinguishing between unit policy and the

actions of individual soldiers is not addressed). To have an expectation of being given quarter, enemies had to fight in uniforms with distinctive insignias; masquerading as the enemy either by wearing enemy uniforms or by displaying enemy flags also forfeited the expectation.

U.S. military units are no longer allowed to execute prisoners even if this would "cumber" them or "threaten their salvation", as the current policy on Enemy Prisoners of War (EPW) and Civilian Internees indicates:

> Basic U.S. policy underlying the treatment accorded EPW and all other enemy personnel captured, interned, or otherwise held in U.S. Army custody during the course of a conflict requires and directs that all such personnel be accorded humanitarian care and treatment from the moment of custody until final release or repatriation. The observance of this policy is fully and equally binding upon U.S. personnel, whether capturing troops, custodial personnel, or in whatever other capacity they may be serving. This policy is equally applicable for the protection of all detained or interned personnel, whether their status is that of prisoner of war, civilian internee, or any other category. It is applicable whether they are known to have, or are suspected of having, committed serious offenses which could be characterized as a war crime. The punishment of such persons is administered by due process of law and under the legally constituted authority. The administration of inhumane treatment, even if committed under stress of combat and with deep provocation, is a serious and punishable violation under national law, international law, and the Uniform Code of Military Justice. (US.Army Field Manual 3-19-40, ch. 1-36.

The U.S. military justice system requires servicemen and women not only to adhere to such rules, but also to report any violations of which they become aware; failure to report is itself considered a violation. If one takes these rules seriously, and allows that they influence behavior, one is pushed toward the conclusion that many people, both within and outside the military, reject the maxim that all's fair in (love and) war. Norms and rules affect behavior. American soldiers, and those of other countries, have, in violation of such rules, killed prisoners of war and will continue to do so. From the

standpoint of a narrow version of economic reasoning, however, what is remarkable is the many instances in which this hasn't happened, in which rules such as these have both guided and reflected human behavior.

Conclusion.

Debates about the inherent aggressiveness of humans towards each other, and more generally, the features of the human ethogram, have a long history, reflected for example in the diverging views of Konrad Lorenz (1966) and Ashley Montagu (1976). One might expect the behavior of soldiers to provide strong and unequivoval support for a position closer to the Lorenz view, since, after all, war is brutal, and soldiers have participated directly in killing hundreds of thousands, indeed millions of people. But in fact the behavior of men in the military presents a far more nuanced picture, providing considerable evidence that humans have innate predispositions against harming each other. These inhibitions can be overcome, but only with effective training programs.

While many social scientists and armchair philosophers adopt the "thin veneer of civilization" view of mankind – that only culture and civilization stand in the way of our tearing each other apart, most students of the military reach a different conclusion. As Gwynne Dyer, author of the BBC series and subsequent book War: The Lethal Custom put it, "Men will kill under compulsion – men will do almost anything if they know it is expected of them, and they are under strong social pressure to comply—but the vast majority of them are not born killers" (Dyer, 2005, p. 57).

A central theme of my 2001 book was that every day we visit much greater benefit on our conspecifics by not harming them than we do through affirmative acts of assistance. It is much, much easier for me to detract from your welfare by harming you

through physical injury or death than it is for me to improve your welfare through affirmative assistance.

A corollary is that the greatest benefit I can confer on you is usually not to harm you. Affirmative acts – such as soldiers' sacrificing their life for their comrades -- are only the exposed tip of the iceberg of altruistic behavior, even though most of the literature on altruism focuses exclusively on them. One might expect to find little evidence of either type of biologically altruistic behavior in military units which, over the centuries, have been responsible for tens of millions of deaths. Perhaps surprisingly, as the above discussions illustrate, we find evidence of both.

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