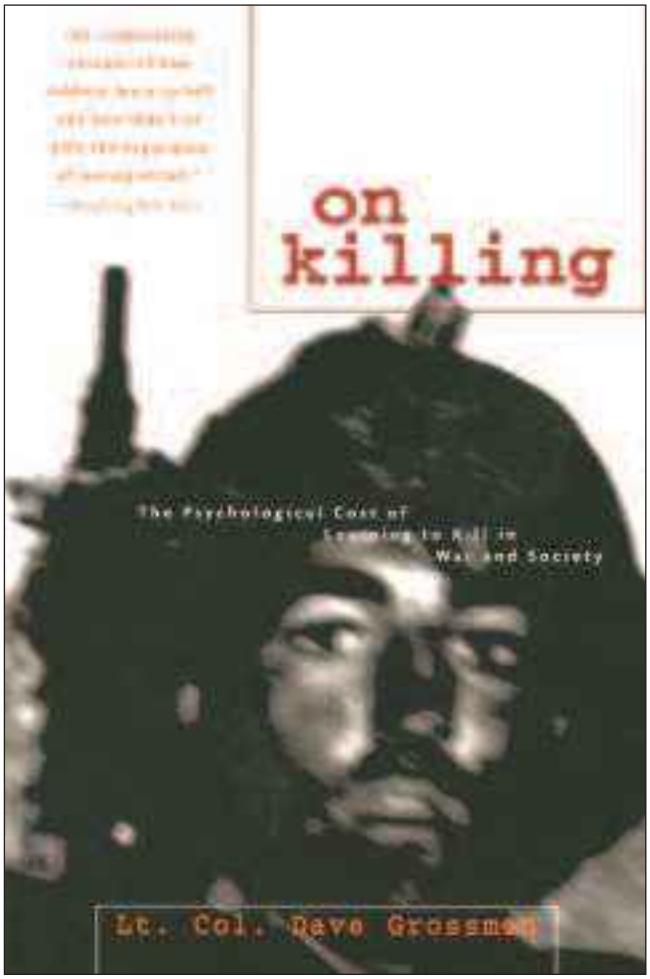
KILLING FOR THEIR COUNTRY: A NEW LOOK AT "KILLOLOGY"

by Robert Engen



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"Patriots always talk of dying for their country, but never of killing for their country."

– Bertrand Russell

Introduction

Over a decade ago, Lieutenant Colonel Dave Grossman, a former US Army Ranger and military psychologist, published a book entitled *On Killing: The Psychological Cost of Learning to Kill in War and Society.* This work, along with its recent sequel, On Combat, have established Grossman's reputation in military law enforcement circles in North America as an expert on the human elements of warfare. Articles expanding and repeating the themes of these books have been published in *Christianity Today,* the *International Journal of Emergency Mental Health,* and on the Internet.[1] On Killing is required reading at the FBI Academy, and it has been made a part of the curriculum at West Point. Lieutenant Colonel Grossman has been engaged on a number of speaking tours throughout the United States, and has founded his own research group investigating "killology, the scholarly study of the destructive act."[2] More recently, Grossman's work has been gaining similar popularity in Canada. He has given several presentations to the Canadian Forces and the Royal Canadian Mounted Police, and *On Killing* has been included in the Canadian Forces Leadership Institute's 2006 professional studies reading list.[3] Grossman's *On Combat* is being prescribed by some members of the Canadian Forces' leadership as required reading for officers deploying overseas.

Grossman has become a serious contributor to popular knowledge on military psychology, and his popularity owes much to the wide acceptance of his theories on the human act of killing. These theories are highly revisionist, and claim that normal, healthy human beings – including trained soldiers – are physiologically and psychologically incapable of killing one another. For Grossman, this translates into a belief that "everything you think you know about war is based on 5,000 years of lies."[4] Only since the end of the Second World War have the Western nations discovered ways of psychologically conditioning their soldiers to kill others in face-to-face combat, Grossman claims. Prior to that, only a tiny fraction of the most elite (or psychotic) soldiers were capable of overcoming their innate resistance to killing.

Curiously, these works have elicited no serious response by military historians, in spite of the author's provocations regarding the discipline being founded upon lies. Instead, Grossman's theories have achieved great acceptance and are defining new popular understandings of killing, combat, and military history.

As a military historian, I am instinctively skeptical of any work or theory that claims to overturn all existing scholarship – indeed, overturn an entire academic *discipline* – in one fell swoop. In academic history, the field normally expands and evolves incrementally, based upon new research, rather than being completely overthrown periodically. While it is not impossible for such a revolution to take place and become accepted, extraordinary new research and evidence would need to be presented to back up these claims. Simply put, Grossman's *On Killing* and its succeeding "killology" literature represent a potential

revolution for military history, if his claims can stand up to scrutiny – especially the claim that throughout human history, most soldiers and people have been unable to kill one another.

I will be the first to acknowledge that Grossman has made positive contributions to the discipline. *On Combat,* in particular, contains wonderful insights on the physiology of combat that bear further study and incorporation within the discipline. However, Grossman's current "killology" literature contains some serious problems, and there are some worrying flaws in the theories that are being preached as truth to the men and women of the Canadian Forces. Although much of Grossman's work is credible, his proposed theories on the inability of human beings to kill one another, while optimistic, are not sufficiently reinforced to warrant uncritical acceptance. A reassessment of the value that this material holds for the Canadian military is necessary.

The evidence seems to indicate that, contrary to Grossman's ideas, killing is a natural, if difficult, part of human behaviour, and that killology's belief that soldiers and the population at large are only being able to kill as part of programmed behaviour (or as a symptom of mental illness) hinders our understanding of the actualities of warfare. A flawed understanding of how and why soldiers can kill is no more helpful to the study of military history than it is to practitioners of the military profession. More research in this area is required, and *On Killing* and *On Combat* should be treated as the starting points, rather than the culmination, of this process.

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Dave Grossman.

This article will analyze two major areas of evidence for Grossman's theory: his biological-psychological theories on human nature, and his citing of military history to substantiate his extraordinary claims. I am not an expert in biology or psychology, but even a layman's reading of the literature turns up credible works that clash with Grossman's interpretations. And in terms of military history, Grossman's over-reliance upon S.L.A. Marshall's famous "ratio of fire" data represents a serious shortcoming. These matters must be discussed in some depth.

Human Nature

Grossman's ideas with respect to the application of biology and psychology to the military profession have been instrumental in establishing him as an authority on human behavioural issues. One suspects that much of Grossman's popularity is due to a highly optimistic view of human nature. As he writes in *On Killing,* "...from the standpoint of a historian, a psychologist, and a soldier, I began to realize that there was one major factor that was missing from the common understanding of killing ... the simple and demonstrable fact that there is within most men an intense resistance to killing their fellow men." This resistance is so strong, Grossman tells us, that in most circumstances, soldiers in battle will die before they will overcome it.[5] He further stipulates the presence in every human being of "...a force that understands at some gut level that all humanity is inextricably interdependent and that to harm any part is to harm the whole."[6] This is an uncompromisingly optimistic view of human nature and biology, and the appeal is understandable. No doubt, the world would be better off if human nature corresponded to this theory.

Unfortunately, these ideas seem inconsistent with what scientists and researchers tell us about human behaviour, which is far richer and more complicated than Grossman acknowledges. Despite what "killology" teaches, an innate biological resistance to killing is neither simple nor consistently demonstrable in human beings. There is much that we do not know about biology, evolution, and the place of humanity in nature, but our best current knowledge does not lend much support to Grossman's theories.

Take, for instance, where Grossman's work touches upon animal behaviour. One of his central claims is that human behaviour under stress is really no different from that of any other animal.[7] He takes as proof the assertion that animal species do not kill within their own species, and that "...when the fight option is utilized, it is almost never to the death." Instead, he claims, animals go through a process of posturing and non-lethal combat that is supposedly vital to the survival of the whole species, preventing needless death and allowing young males to live through early confrontations to pass on their genes at a later time.[8] Grossman is referring to natural selection, of course, but apparently he has a flawed understanding of how this process actually works. Natural selection in biology is a deeply selfish mechanism, and it is fundamentally about the best-adapted individuals surviving to pass on their own genes. In the natural evolutionary process, there is a struggle for reproductive advantage within a species, and victory usually goes to individuals best adapted to their circumstances.[9] There is no genetic imperative in living things to care about the survival of the species as a whole. Organisms are not as altruistic as Grossman believes, and animal behaviour is shaped by maximum survival and reproductive success of the individual or its close kin, and not of the species.[10]

It is conceivable that restraint and posturing in intra-specific combat developed as adaptations in some species, since, in nature, deadly combat would likely leave the victor almost as mauled as the loser. A species that could gradually adapt toward non-lethal intra-specific violence might possess a reproductive advantage. At the same time, however, deadly aggression can also be viewed from an evolutionary perspective as an adaptation.[11] Despite Grossman's claims to the contrary, animals *do* kill within their own species. Mankind's closest genetic relative in the animal kingdom is the common chimpanzee, with whom we share some 98.4 percent of our DNA. There have been many documented cases of chimpanzees killing each other, most famously in Dr. Jane Goodall's observation of the extermination of one chimpanzee band by another between 1974 and 1977. Pulitzer Prize-winning writer and scientist Jared Diamond claims, "...[that] of all our human hallmarks ... the one that has been derived most straightforwardly from animal precursors is genocide. Common chimps already carried out planned killings, extermination of neighboring bands, wars of territorial conquest, and abduction of nubile young females." Diamond takes this point further, saying, "...[that] if chimps were given spears and some instruction in their use, their killing would undoubtedly begin to approach ours in efficiency."[12] Aside from the primates, wolves and other wild dogs engage in very deadly intra-specific fighting, and, beyond the humans that hunt them, they are generally their own greatest source of mortality. The common pavement ant is notoriously aggressive, engaging in pitched battles involving masses of workers. Lions also on occasion kill other lions, and there are reports of the killing and cannibalization of cubs after one of their protector males has died and their territory was invaded by other prides.[13] Species do exist that have adapted, if not for constant murderous behaviour, then at least for the potential for deadly intra-specific competition; others have evolved toward more non-lethal violence. Chimpanzees kill one another, but gorillas do not appear to do so. More research into these phenomena is required, but this evidence does not suggest a universal "resistance to killing" biological imperative at work. Within some species, the ability and willingness to kill its own kind, and to develop a reputation for doing so, can be seen as a beneficial adaptation.[14] Biologist Konrad Lorenz believed that mankind in particular had never developed non-lethal intra-specific behaviour or structural elements. While Grossman claims otherwise, there is no evidence of a "natural" resistance to killing governing intra-specific behaviour in the animal kingdom.

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"A flawed understanding of how and why soldiers can kill is no more helpful to the study of military history than it is to practitioners of the military profession."

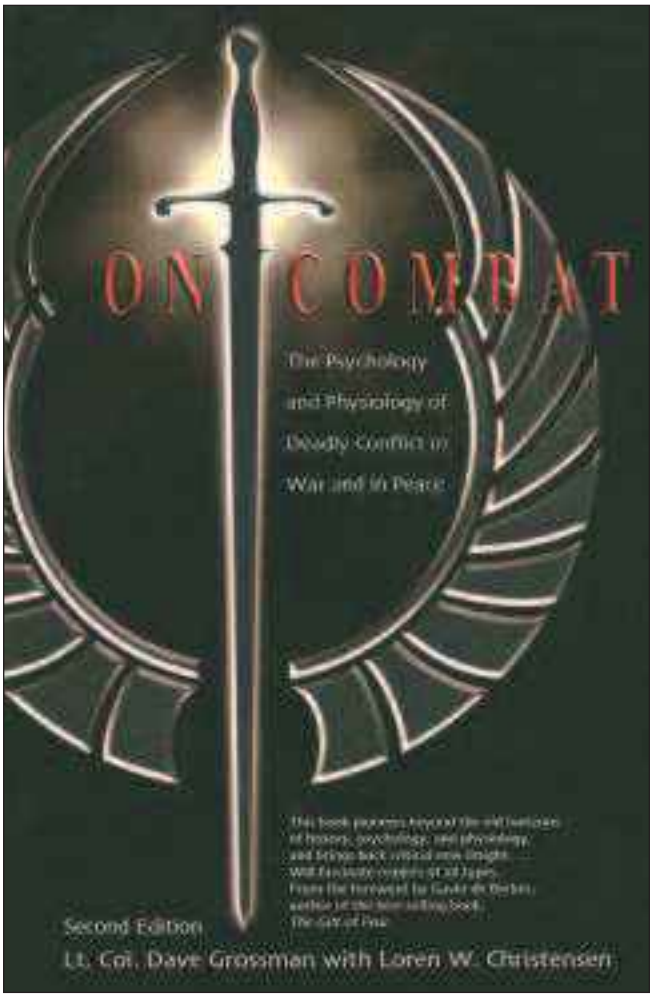
However, Lorenz also cautioned against drawing anthropomorphic conclusions from animal research. Humans may be part of the living world, but we are also unique in it, if only because of our capacity for higher-order cognition. The argument could still be made that human beings possess – have evolved an adaptation toward, or perhaps were "gifted" with by God – an innate resistance against intra-specific killing, even if our genetic neighbours have not. This would probably be Grossman's perspective. He refers to 98 percent of people as "sheep" – kind, decent, cooperative people who cannot kill and who need protection by those who can.[15] In his book, *The Dark Side of Man,* biologist and anthropologist Michael Ghiglieri derides such thinking as coming from the "...Bambi school of biology, a Disneyesque vision of nature as a collection of moralistic and altruistic creatures ... if anything is really wrong with us, it explains, it is a sociocultural problem that we can fix by resocializing people. It is not a biological problem."[16] Ghiglieri has criticized this narrow understanding of human violence, specifically claiming that Grossman's *On Killing* engages in unabashed "wishful thinking" that killing is an acquired proclivity that society must inculcate. Books such as these, Ghiglieri writes, "...were written by people with little or no understanding of biology – or who simply ignored or denied its findings ... anyone insisting that men do not have an instinct to kill other men is in factual error."[17]

"Biologist Konrad Lorenz believed that mankind in particular had never developed non-lethal intra-specific behaviour or structural elements."

Despite Grossman's claims, there exists no midbrain evolutionary mechanism in humans that prevents healthy people from killing one another for the good of the species. There is much debate with respect to the extent to which any human behaviour can be regarded as "instinctive," but what is clear is that if human behaviour is dominated by instinct and genetic imperative, it operates along the selfish individual-oriented lines of natural selection, and it has developed in a violent fashion. Intra-specific aggression, cruelty, and killing may have emerged in prehistoric man as early as 1.5 million years ago as a hominid behavioural mechanism which promoted evolutionary fitness through personal and social power.[18] In short, social challenges can threaten the individual with a loss of face, with the resultant threat to reproductive success; such challenges can and do lead to deadly confrontations in defence of status and reputation.[19] Individuals who develop or enhance a reputation for ferocity and murder will have opportunities to wrest resources from others without the need for risky, direct conflict – improving their own survival "fitness" through social reputation.[20] The numbers suggest that even modern humans are more than willing to kill over social status and the loss of face. American criminologists have found that the motives for most homicides in the United States – 53 percent of all known cases in 1995 and 55 percent in 1996 – were "altercations of relatively trivial origin; insult, curse, jostling, etc."[21] Not only do humans kill one another, but we do so in patterns that often benefits short-term survival and genetic dominance of the individual, and for reasons that, to the outside observer, would appear to be trivial. Although violence is not always desirable or inevitable – nor need that violence become deadly – individuals possessing a degree of aggressiveness may once have been better-adapted to survive and to leave descendants.[22] Grossman's work tends to portray humans as slaves to an altruistic evolutionary mechanism that does not exist. While he has argued convincingly that human beings do have increased stress reactions to intra-specific violence, as opposed to other kinds of trauma,[23] there is little evidence in evolutionary biology to support an innate resistance to killing.

One possible defence of the "killology" theory would be the claim made in *On Combat* that, regardless of all of the numbers, only the two percent of the population supposedly born without this resistance to killing (the sociopathic "wolves") do the great majority of the face-to-face killing in both war and society (killing at a distance being psychologically different).[24] Grossman appears to have arrived at this number by examining studies from the Second World War, which demonstrated that after 60 days of sustained combat, 98 percent of combat soldiers would become psychiatric casualties, and the two percent who did not showed a predisposition toward "aggressive psychopathic personalities."[25] He extrapolates that these "damaged" personalities were the only people reliably carrying out face-to-face killing throughout history (until very recently). Exceptions include when non-killers are in groups, when they are under authority, or when an opponent is running away from them, all of which were circumstances Grossman identifies as those in which "normal" individuals might overcome their resistance to killing. This list of exceptions is substantial enough on its own that one might reasonably question the effectiveness of this "resistance," even by Grossman's standards. But one should also not overlook just how easy it can be to make "normal" individuals inflict

lethal pain upon one another. Stanley Milgram's much-cited experiments in obedience to authority offer compelling proof of this point.[26] Milgram found that 65 percent of subjects in an experiment were willing to inflict what they believed was a lethal dose of electricity onto a stranger, simply because they were told to do so by an authority figure. Furthermore, 30 percent were willing to inflict what they believed was a lethal shock to a victim while *in physical contact,* literally holding them down to shock them.[27] In multiple experiments, the subjects responded similarly, regardless of age, ideology, religion, nationality, or (most surprisingly) gender.[28] Grossman cites Milgram's study as well, but if the "average" person was prepared to kill face-to-face more than half the time at the simple insistence of a minor authority figure, then the idea that only a tiny minority of human beings can "naturally" kill seems doubtful. The power of authority and leadership should not be underestimated – the whole point of Milgram's experiment – but such results cast healthy doubt upon claims that most humans cannot kill. If this resistance to killing can be undone so easily and consistently, one can argue that it likely does not exist at all.



An example from military history shows the "killology" theories dealing with the socio/psychopathic two percent to be even more doubtful. It is a documented fact that soldiers from support branches behind the lines are far more likely to engage in unjustified violence and commit atrocities than are combat troops. Support troops are reported to hate the enemy more than those who have experienced combat, and are more likely to plunder, to be cruel to civilians, and to kill enemy prisoners. Israeli military psychologist Ben Shalit found that in the Israeli Defence Forces, cases of breaking the military code were many times higher for support troops than for combat troops – and that similar evidence for more aggressive behaviour by non-combatant soldiers came out of US troops in Vietnam, as well as by German troops in the USSR during the Second World War.[29] Are there more "wolves" in the support ranks than in the combat arms, or are the group dynamics and pent-up aggressions overcoming the resistance to killing for support troops? If so, one might again observe how easy it appears to be to overcome this resistance to killing. It is likely impossible to quantify, but it appears very unlikely that only the socio/psychopathic two percent of human beings have done most of the world's killing in the past.

Even a layman's examination of the literature in biology and psychology shows little support for Grossman's theory on a resistance to killing. As Dr. Michael Allen Fox stated in a recent open peer commentary, strong evidence exists for regarding the perpetration of killing and cruelty as having "deep evolutionary, neurological, and biochemical underpinnings, and we probably must accept this."[30] Of course, everything we think we know could be disproved should new verifiable evidence be discovered. Such is the nature of scientific inquiry. However, Grossman has not provided sufficiently extraordinary evidence to support his claims about a resistance to killing. The best evidence on human nature tells us that whatever resistance or "phobia" we have toward killing is ethical in origin, a result of higher intellectual functions and the shaping of our socio-cultural background.[31] Not every person has killed or will kill, but to suggest that the great majority are *incapable* of killing is to make an extraordinary claim, and one that does not possess any extraordinary biological or psychological evidence to give it credence.

S.L.A. Marshall's Ratio of Fire

Grossman draws most of the evidence for his theories on killing from military history, specifically, from the controversial writings of S.L.A. Marshall, a journalist with the US Army's Historical Section during the Second World War. Marshall developed an innovative post-combat interview technique wherein he would speak to a unit of soldiers fresh out of combat, and, together, they would attempt to reconstruct an action.

In terms of historical methodology this was a good idea. However, the claims that Marshall made, supposedly based upon his interview data, proved to be controversial. He claimed that only 15 to 25 percent of even the best-trained soldiers would ever fire their weapons in combat. As Marshall wrote in his book on the subject, *Men against Fire,* "... 75 per cent will not fire or will not persist in firing at the enemy and his works. These men may face danger but they will not fight."[32] Marshall's conclusion was that the average, healthy individual possessed an unconscious "...inner unrealized resistance toward killing a fellow man," although with Marshall there was no talk of evolutionary biology and more reference to socialization.[33] He claimed that these statistics were a universal truth of human combat, fully backed up by his painstaking research and interviews.

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The US Army accepted his conclusions at face value and, according to Marshall and his supporters, implemented changes to combat training that would subsequently boost the combat firing ratio of infantry soldiers. Marshall reported, using his same interview techniques, that the ratio had risen to 55 percent of soldiers firing their weapons by the Korean War, and was over 90 percent in Vietnam.[34] The problem had been solved, and by the time anyone was seriously questioning these numbers, almost all soldiers were supposedly firing their weapons in combat. Marshall's data allegedly proves Grossman's argument about a resistance to killing, and Grossman employs these numbers lavishly and as being absolutely correct in all his "killology" works, claiming that raising the firing ratio from 15 percent in Normandy to 90 percent in the Falklands War "...represents a six-fold increase in combat effectiveness."[35] The difference is supposedly in special conditioning techniques that are now used to train soldiers to kill. Prior to their introduction, hardly any soldiers fired their weapons, let alone killed anyone with them.

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Marshall has been praised as a great military historian, and he has no doubt contributed to the knowledge of warfare, particularly in terms of the human elements of combat. However, one should remain faithful to the axiom that extraordinary claims require extraordinary evidence. Marshall's claims were certainly extraordinary. What of his evidence?

Here, Marshall becomes extremely problematic as a source. Historians and researchers since the 1980s have been consistently demonstrating that Marshall did not have the evidence to back up his claims. Roger Spiller, among the first historians to publicly criticize Marshall, claimed that his ratio of fire numbers were "...an invention," and that "Marshall had no use for polite equivocations of scholarly discourse. His way of proving doubtful propositions was to state them forcefully. Righteousness was always more important for Marshall than evidence."[36] Other historians discovered that none of Marshall's aides and assistants could ever remember Marshall asking the troops questions during the group interviews that had anything to do with whether they had fired their weapons.[37] In the surviving field notebooks used by Marshall during his interviews, historians have found no signs of the statistical compilations that would have been necessary to deduce a ratio as precise as that found in *Men Against Fire.*[38] Such a precise, surprising number as the 15 to 25 percent ratio should have required a great amount of hard work and data-gathering to arrive at, but there is no evidence that Marshall carried out the statistical legwork his claims imply. The only interview notes actually located were found in an archive of a Maryland National Guard division, wherein soldiers testified to having used their weapons in action. There was no mention of the ratio of fire.[39]

Marshall was employed by the US Army's Historical Section, and his job as an army historian was the compilation of battlefield narratives. Systematically compiling and analyzing statistical data was not what the Historical Section was about, nor was it something for which Marshall had any interest or training. This makes Marshall's statistics, at best, an estimation based upon personal observations. And with no surviving notes or documentation that would substantiate his claims, and no corroborating evidence from Marshall's companions, there is only Marshall's word that his claims regarding the ratio of fire were supported by the empirical evidence of his interviews.

Of course, it is still possible, and no doubt Grossman would claim, that even if Marshall did not 'crunch the numbers,' his claims were, nonetheless, highly accurate. Part of the reason that Marshall's ratio of fire is still quoted frequently by historians and military analysts is that while Marshall's credibility has been thoroughly undermined, there has never been

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much evidence from the Second World War to either corroborate or disprove his ratio of fire theory. The excellent survey research carried out by American psychologist Samuel Stouffer and his team during the war, for example, contains no information either way on the issue of soldiers firing their weapons.[40] No other source at the time was discussing the ratio of fire at all, it seems, so while Marshall's credibility has been attacked, his numbers have never really been refuted with documentary evidence.

The issue of Marshall's ratio of fire was one that I have always found to be very interesting, and when I decided to pursue graduate studies in history, I began researching the subject to see what corroborating evidence might exist in the primary source documentation. In mid-2007, I began examining a series of battle experience questionnaires filled out by Canadian infantry officers during the Second World War, addressing as they did a wide array of tactical questions, and giving the soldiers the opportunity to provide feedback and personal comments with respect to combat. Several hundred questionnaires were filled out by Canadians from rifle companies in 1944 and 1945 shortly after they had returned from combat, giving them the same immediacy attributed to Marshall's group interviews. Given the similar timeframe to Marshall, as well as the similar content, I believe they are at least as credible a source as *Men Against Fire,* and likely more so, since the original questionnaires can still be found and verified at the Library and Archives Canada (LAC) in Ottawa. These battle experience questionnaires are quite candid, and they explore the tactical realities facing Allied soldiers in the Second World War, both in the Mediterranean theatre and in northwest Europe. I perused over 150 of the infantry surveys stored at LAC over the course of several months, compiling statistics from the formal survey questions and transcribing all the informal personal comments that had been attached. The evidence I collected became the basis for my Master's thesis, which, as this article goes to press, is being revised as a manuscript.[41]

There is a wealth of varied information contained in these questionnaires, but what they can tell us about Marshall's ratio of fire is pivotal. Not a single one of the questionnaires – filled out by infantry officers who fought at close quarters and commanded rifle companies, platoons, and sections in combat – mentions anything about soldiers not firing their weapons. Indeed, the exact opposite appeared to be the major problem – that is, Canadian troops firing *too much,* wasting ammunition, and giving away their positions.[42] Most officers, however, were generally satisfied with the rate of small-arms fire, and they regarded it as being very effective in battle, particularly for defeating the inevitable German counterattacks that followed every offensive action.[43] A failure on the part of some of their troops to actively participate in battle was only highlighted by a few respondents during discussions of combat fatigue and 'green' replacement soldiers, and even those cases constituted a small minority. If over 75 percent of the riflemen under their command would not fight, as Marshall and Grossman claim, then the officers filling out the questionnaires would have noticed. Given their candid responses and genuine desire to help the Canadian Army train and fight better – the stated purpose of the questionnaires was to provide feedback with respect to combat training and experience while the war was still going on – it is extremely implausible that they would have overlooked, concealed, or covered up such alarmingly relevant information.

The questionnaires demonstrate that infantry combat is too complex, fluid, and terrifying an experience to be reduced to simple numbers. Today's hero could easily be tomorrow's coward (a point Marshall tried to make), and soldiers could not easily be reduced to the labels of killer/non-killer, or shooter/non-shooter.

A parallel study to Marshall's interviews, then, fully documented and straight from the subjects themselves

with no intermediary, presents data that is in direct contradiction to that of Marshall. The questionnaire respondents were exclusively Canadian, of course, and they cover a completely different set of subjects than Marshall's interviews. They also apply only to the Canadian experience. However, Marshall strongly implied that his 15 to 25 percent ratio of fire was a *universal* condition of modern warfare, and Grossman has been very explicit in his championing of the universality of this phenomenon as a part of human nature.[44] The evidence from the Canadian battle experience questionnaires indicates that non-participation in combat by riflemen was not a problem in the Canadian Army between 1943 and 1945; that infantry fire was usually quite effective; and that if there was a problem with the firing it was always due to *too much* fire rather than *too little*. Supposing Marshall was correct with respect to his claims, and there were problems with non-participation in the US Army, then either the Canadian Army was, by Grossman's reckoning, many times more effective a fighting force (of which there is no evidence) or else claiming the universality of Marshall's findings is factually incorrect. While it might be going too far to call S.L.A. Marshall a liar, he appears to have simply been wrong in his claims about the ratio of fire.

Although Grossman cites a few other pieces of evidence from military history to support his "killology" thesis, S.L.A. Marshall's "hard data" is the centerpiece of his argument regarding the inability to kill: most of what remains is either derived from Marshall or anecdotal in nature. Since it is Marshall that forms the core of evidence underlying many of Grossman's claims about killing in war, there are obvious problems inherent to reading the "killology" literature without reservation.

Conclusion

It would appear, then, that Lieutenant Colonel Grossman's appeals to biology and psychology are flawed, and that the bulwark of his historical evidence – S.L.A. Marshall's assertion that soldiers do not fire their weapons – can be verifiably disproven. The theory of an innate, biological resistance to killing has little support in either evolutionary biology or in what we know about psychology, and, discounting Marshall's claims, there is little basis in military history for such a theory either. This is not to say that all people can or will kill, or even that all soldiers can or will kill. Combat is staggeringly complex, an environment where human beings are pushed beyond all tolerable limits. There is much that we do not know, and plenty that we should be doing more to learn about. Grossman is clearly leading the way in posing these questions. Much of his work on the processes of killing and the relevance of physical distance to killing is extremely insightful. There is material in *On Combat* about fear, heart rate, and combat effectiveness that might be groundbreaking, and it should be studied carefully by historians trying to understand human behaviour in war. No disrespect to Lieutenant-Colonel Grossman is intended by this article, and it is not meant to devalue his work. I personally believe that some of the elements of his books, particularly the physiology of combat, would actually be strengthened if they were not shackled to the idea that humans cannot kill one another. But there are still questions that need to be asked, and the subject should not be considered closed. Grossman's overall picture of killing in war and society is heavily informed by a belief in an innate human resistance to killing that, as has been offered here, does not stand up well to scrutiny. More research on the processes of human killing is needed,

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Canadian infantry in action during the Italian Campaign. *The Hitler Line, 1944,* by Charles Comfort.

and although *On Killing* and *On Combat* form an excellent starting point, there are too many problems with their interpretation for them to be considered the final word on the subject. I believe that, in the future, the Canadian Forces needs to take a more critical posture when it comes to incorporating Grossman's studies into its own doctrine. It is imperative that our nation's military culture remain one devoted to pursuing the best available evidence at all costs, rather than one merely following the most popular consensus.

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NOTES

1. See: Dave Grossman, "Trained to Kill," *Christianity Today,* (10 August 1998); Dave Grossman, "On Killing II: The Psychological Cost of Learning to Kill," *International Journal of Emergency Mental Health,* Vol. 3, No. 3 (2001), pp. 137-144.
2. *Killology Research Group,* at <http://www.killology.com/index.htm>.
3. Canadian Forces Leadership Institute, *A Guide to Reading on Professionalism and Leadership* (Kingston, ON Canadian Defence Academy, 2006), p. 26.
4. Dave Grossman, *On Combat: The Psychology and Physiology of Deadly Conflict in War and Peace* (NP: PPCT Research Publications, 2004), p. 10.
5. Dave Grossman, *On Killing: The Psychological Cost of Learning to Kill in War and Society,* (New York: Back Bay Books, 1996), p. 4.
6. *Ibid.,* pp. 30, 37-38.
7. Grossman, *On Combat,* p. 195; *On Killing,* pp. 10-11.
8. Grossman, *On Killing,* p. 6.
9. Anatol Rapoport, *The Origins of Violence: Approaches to the Study of Conflict* (London: Transaction Publishers, 1995), p. 16.
10. Michael P. Ghiglieri, *The Dark Side of Man: Tracing the Origins of Male Violence* (Cambridge: Perseus Publishing, 1999), pp. 179-181.
11. Rapoport, *The Origins of Violence,* pp. 19-20.
12. Jared Diamond, *The Third Chimpanzee: The Evolution and Future of the Human Animal* (New York: Harper Perennial, 2006), p. 294.
13. Greg Cashman, *What Causes War? An Introduction to Theories of International Conflict* (NP: Lexington Books, 1999), p. 17.
14. Diamond, p. 290.
15. Grossman, *On Combat,* pp. 176-177.
16. Ghiglieri, p. 179.
17. *Ibid.,* pp. 177-178.
18. Victor Nell, "Cruelty's Rewards: The gratifications of perpetrators and spectators," in *Behavioral and Brain Sciences,* Vol. 29 (2006), p. 211.
19. David M. Bruss, *The Murderer Next Door: Why the Mind is Designed to Kill* (New York: Penguin, 2005), p. 203.
20. Ghiglieri, p. 143.
21. K. Maguire and A.L. Pastore, *Sourcebook of Criminal Justice Statistics, 1996* (Washington: US Department of Justice, 1996), p. 334. See also: Federal Bureau of Investigation (FBI), Crime in the United States, 1996, (Washington: U.S. Department of Justice, 1997), p. 21. Presented in the context of the 19,645 documented murders that occurred in the United States in 1996.
22. Aubrey Manning, "The genetic bases of aggression," in *Aggression and War: Their Biological and Social Bases,* Jo Groebel and Robert A. Hinde (eds.) (Cambridge: Cambridge University Press, 1989), p. 56.
23. Grossman, *On Combat,* pp. 2-6.
24. *Ibid.,* p. 177.
25. Grossman, *On Killing,* pp. 43-44.
26. See: Stanley Milgram "Behavioral study of obedience," in *Journal of Abnormal and Social Psychology,* Vol. 67 (1963), pp. 371-378.
27. Charles Helm and Mario Morelli, "Stanley Milgram and the Obedience Experiment: Authority, Legitimacy, and Human Action," in *Political Theory,* Vol. 7, No. 3 (August 1979), pp. 321-325.
28. Janet T. Gibson, "Training People to Inflict Pain: State Terror and Social Learning," in *Journal of Humanistic Psychology,* Vol. 31, No. 2 (Spring 1991), p. 74.
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