

# SEEING GREEN

## Visual Technology, Virtual Reality, and the Experience of War

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**Abstract:** This article addresses the question of how visual technology—night vision, thermal imaging, and virtual reality—has changed the experience of war for both combatants and non-combatants. Video and still images are analyzed to draw out some of the phenomenological aspects of how technology mitigates the perception of combat and its resultant casualties. I argue that while visual technology makes the experience of war more intimate, it also generates psychological distance between the viewer and the viewed. Weapons equipped with visual technology facilitate war crimes by dehumanizing the individuals being targeted and filtering the carnage these weapons produce.

**Keywords:** night vision, virtual reality, visual technology, war, weapons

There was a time in the history of warfare when nightfall meant the end of fighting for the day. During the nineteenth and twentieth centuries, several techniques for overcoming darkness during combat maneuvers were developed, including illumination of the battlefield with flares or searchlights as well as forecasting nighttime visibility provided by ambient light from the moon, stars, or surrounding light sources. These techniques were useful but usually offered equal benefits to both sides of the battle. Recent advances in visual technology are giving modern warriors a competitive edge over less technologically advanced opponents and changing the experience of war in dramatic ways.<sup>1</sup> For example, among the many dangerous tasks that infantry soldiers are asked to perform in Iraq, the night raid is perhaps one of the most difficult. The night raid brings with it the potential for accidental ‘friendly fire’ incidents, civilian casualties, or both. Under the cover of darkness, charged with adrenaline-induced nervous anticipation, squads of grunts bash their way into the home of an unsuspecting resident to confiscate weapons, gather intelligence, and detain



suspected insurgents. When planning operations, commanders know that the key to a successful night raid, along with good human intelligence and the element of surprise, is the ability to see through the darkness. The majority of combat troops currently in Iraq are carrying night vision goggles (NVGs), which allow them to see while maneuvering and fighting at night. Figures 1 and 2 give a sense of the individual soldier's perspective when looking through NVGs and convey how war is experienced on a daily basis. During 24-hour operations, some soldiers may spend several hours per night wearing these goggles, especially when driving or flying.

The ubiquitous use of night vision devices among US military forces raises a number of questions that I will address regarding the experience of combat through the lens of visual technology. The first explores how night vision and other technologies shape the average combat soldier's experience of war. While numerous scholars have written on the history of military technology (Adas 1989; Bacevich 1996; Hacker 1994; Owens 2002; D. Smith 1993), the articulation of science and warfare (Greenwood 1990; Gusterson 1996; MacKenzie 1986; Simons 1999; M. Smith 1985; Virilio 1989, 2002), and the traumatic psychological effects of war (Grossman 1995; Grossman and Christensen 2004; Lifton [1973] 1992; Shay 1994, 2002; Simons 1999; Young 1995), little has been written on the experience of war through high-technology devices. Conceptualized as 'cyber warriors',



**FIGURE 1** Members of the Iraqi Civil Defense Corps (ICDC) Search a Home in Baghdad (Public Affairs Office, 1st Armored Division)



**FIGURE 2** Soldiers Conduct a Cordon and Search during Operation Iron Hammer in Baghdad (Public Affairs Office, 1st Armored Division)

‘cyborgs’, and ‘digital soldiers’, the futuristic war fighters once thought of as purely science fiction are gradually becoming reality (Bevin 1995; Dunnigan 1996; Friedman and Friedman 2004; Levidow and Robins 1989; Shukman 1995; Vest 2002). The military spends billions of dollars annually to develop what it calls its Future Force Warrior (FFW) and Soldier as a System (SaaS) concepts. Equipped with sophisticated helmets supplying an array of digital data, visually enhanced targeting, lightweight lethal weapons, and protective body armor, the soldiers of the future will occupy a virtual reality of battlefield information (Goonatilake 1998). Friedman and Friedman speculate that “the multi-spectral sensors, high-speed computers, and brilliant munitions ... raise the possibility of a superior soldier ... a *supertrioop*” (2004: 356; emphasis in original). Viewing the world through the green screens of NVGs is simply the first stage in this radical transformation in the experience of war for combat troops.

Given the increasing availability of military equipment in the civilian market, the second question I will explore is the way in which visual technology has changed war as it is experienced by people whom Virilio (1989) refers to as tele-spectators—those viewing war from a distance. A cursory search for digital cameras and video recorders on the Internet will yield a plethora of devices that have night vision capabilities. In addition, riflescopes are widely used among law enforcement officers and sportsmen for working or hunting at night. The same companies that developed night vision for the military have gone public, so to speak, vending their technology to the broader consumer market. Thus, the notion of ‘seeing green’ carries a double meaning, the first referring to the color viewed through night vision displays and the second to the money being

made by companies involved in developing visual technology for the military. This is not a new trend by any means, since numerous electronic devices commonly used by the general public were first developed within the massively lucrative military-industrial complex (Greenwood 1990; Hacker 1994; M. Smith 1985). An increasing number of journalistic reports feature night vision footage from combat zones around the world, and Hollywood renditions of war use night vision technology to enhance the audience's experience of 'being there'. Nifty sensory-enhancing gadgets are no longer limited to the military or James Bond-type characters but are accessible to the general public. This marks an important development in the experience of war by tele-spectators because now combat can be portrayed in its entirety, day or night.

Lastly, I will examine the way in which virtual reality, the next step in visual technology, is changing combat training for soldiers. The next generation of infantrymen will be trained in basic squad tactics, urban warfare, and enemy recognition using "the Close Combat Tactical Trainer (CCTT). Infantrymen will be placed in a room and outfitted with helmets that will cover their eyes. They will 'see' a combat situation, from terrain to enemies, and they will carry weapons that will have the feel of the real thing. A camera will track the movement of their bodies and adjust the picture accordingly. They will feel as if they were in combat—except they will be perfectly safe, and the simulation can be run over and over again" (Friedman and Friedman 2004: 361). Reminiscent of Goonatilake's (1998) insightful essay on the growing human interface with computer technology, the CCTT brings virtual reality into the military sphere, pulling soldiers deeper into cyberspace than the average citizen. Indeed, the possibility that a soldier could spend extended periods in cyberspace is confirmed by the goals of military research and developers, who are working toward a time when "[a]n infantryman could be fitted with a completely opaque helmet—identical to those used in training—inside of which he would see as real images and icons the data that was being fed into the system by sensors" (Friedman and Friedman 2004: 362). Similarly, military pilots spend dozens of hours in flight simulators, practicing takeoffs, landings, and battle drills, before ever experiencing a 'real' flight.

The experience of virtual reality systems articulates seamlessly with an existing familiarity with the intense and often violent graphics of video games. As James Dunnigan, an analyst of military affairs, notes "taking more than a cue from the creators of computer games, the soldiers now have computer screens full of detailed and easy-to-understand images" (1996: 291). Virtual reality intensifies the experience with three-dimensional visual displays and instant reactions to the users' body movements. Military pilots and gunners are already fitted with helmets that control targeting and weapons systems that they can manipulate by moving their heads. Wherever the gunner looks while wearing his helmet, the weapons system will follow. However, as I demonstrate below, the video game feel of virtual reality opens the door to serious violations of the rules of engagement dictated by the laws of war. While neither visual technology nor virtual reality alone causes soldiers to kill, studies suggest there is a positive correlation between violent games and aggressive behavior

in children and adolescents (Ferguson 2007; Konijn, Bijvank, and Bushman 2007; Tamborini et al. 2004; Weber, Ritterfeld, and Mathiak 2006), especially among males (Polman, de Castro, and van Aken 2008). The military is aware of this fact, which is why it developed the video game *America's Army* as a recruitment tool (Lugo 2006). Seeing enemy combatants as merely figures on a screen, identical to how bad guys are depicted in video games, makes it all too easy to kill them without hesitation: "It looks like a game, but the deaths are not simulated" (Dunnigan 1996: 291). The thrill associated with identifying targets and successfully neutralizing them in the virtual world of video games and virtual reality systems provides the training to do the same in the combat environment, sometimes in an indiscriminate fashion.

These are just a few of the issues that emerge when one considers the relationship between the military, visual technology, and the experience of war. Drawing on work in anthropology, philosophy, and science and technology studies, I argue that visual technology makes the experience of war more intimate while creating psychological distance between the human subjects engaged in combat. Following Nandy's (1988) concern with shifts in the purpose of science vis-à-vis the state and human violence, I will explore the significance of visual technology and its relationship to personal and institutionalized experiences of war. Using digital photos and video recorded by soldiers and civilians in Iraq that I collected from the Internet, I demonstrate how visual technology shapes the experience of war for both participants and tele-spectators. I begin with an expanded discussion of night vision technology, followed by an analysis of digital video taken from an AH-64 Apache attack helicopter gun tape, and end with an exploration of the possibilities presented by virtual reality.

## Owning the Night

Prototypes of night vision and infrared technology, which amplify light and heat signatures respectively, were developed as early as World War II, but it was not until the 1960s that devices such as the Starlight Scope used in the Vietnam War became available in a portable, mass-produced form widely available to combat troops. This first generation of night vision technology was soon superseded in the following two decades by more compact and powerful devices. The 1991 Persian Gulf War provided the first major test of second-generation night vision technology. The decisive US military victory over Iraqi forces led to claims that advanced visual technology allowed the US military to 'own the night'. Indeed, the ability to see at night, both on the ground and from the air, was a major contributing factor in the brevity of that war. Marking an important shift in modern warfare, commanders were able to plan for nighttime operations with a high degree of success due to advanced visual technology. Although the Air Force and Navy's 'smart bombs' and the Army's Patriot missile systems presented technical problems during their initial fielding in combat, visual technology performed well and is now a central component of US military hegemony. Commanders in Operation Desert Storm relied on "intelligence, surveillance, and reconnaissance

systems that could achieve dominant battle space awareness, new communications systems that could transfer that awareness quickly and surely, and precision guidance that could deliver violence over greater distances with speed, accuracy, and devastating effect” (Owens 2002: 207). This is particularly true with regard to the Air Force, Navy, and Special Forces, since most major combat operations in modern war begin with an intense bombing campaign. Generally, Special Forces commandos are clandestinely inserted within enemy territory prior to the bombing in order to locate specific targets and to ‘paint’ targets with lasers that aircraft can detect from the sky. Air Force stealth bombers carrying heavy payloads conduct high-altitude sorties destroying key infrastructure, while Navy cruise missiles fired from miles offshore pinpoint enemy strongholds and communications. During the Gulf War, there was a sustained bombing campaign prior to the commencement of the ground assault, and all of these events usually occurred at night to give US-led forces a distinct advantage over the Iraqis.

However, the military did not have a monopoly on night vision technology since the American media also had cameras with night vision capabilities. Among the most memorable images of the Gulf War was the Cable News Network (CNN) night vision footage of Iraqi anti-aircraft guns firing blindly into the night sky over Baghdad during the first hours of the air campaign (fig. 3). The now famous live newscast by CNN reporters during that bombing may be the first time night vision footage was broadcast internationally.<sup>2</sup> Aside from boosting the status of the fledgling CNN, the video helped project US military prowess to the world by demonstrating its ability to rain strategic air strikes on targets anywhere, at any time. In the following days and weeks, every major news network carried the CNN footage as well as military briefings that featured either night vision or infrared footage of smart bombs successfully hitting their targets.

The Pentagon ensured that coverage of Operation Desert Storm looked very different from how the Vietnam War was portrayed. Gone were images of bloody grunts trudging through the combat zone, soldiers coming home in body bags, and the human suffering exacted on the local population. Instead, the international audience was captivated by the techno-spectacle of precision-guided bombs made possible through advanced visual technology. With the audience becoming intimately engrossed, the war appeared controlled and, perhaps more importantly, bloodless. Watching bombs splashing on the green (night vision) or gray (infrared) screens as they pulverized bridges, bunkers, and tank berms,<sup>3</sup> tele-spectators were drawn closer to the awesome violence of war while distancing themselves from the reality of the human carnage happening right before their eyes. This, along with numerous Hollywood movies that use night vision video to re-create the warrior’s perspective, brings the spectator into a very different relationship with war.<sup>4</sup> What was once hidden in the fog of war is now visible and therefore knowable, intimate. Civilians can vicariously experience war through the darkness and from a distance, in the comfort of their own homes. Because of the way night vision and infrared work, the blood and gore of combat are not so much hidden as obscured. This allows tele-spectators to marvel at the power of technology to bring the experience of war home without having to comprehend fully or process its human cost. The tele-spectators of war are



**FIGURE 3** CNN Footage of Baghdad during the Gulf War

informed about the execution of combat operations but are rarely brought face to face with the consequences of those operations. This is significant because it makes it easier for politicians and military experts to sell wars to their fellow citizens by focusing on the advantages of superior firepower while ignoring the devastation that those weapons cause to those on the receiving end.

Prior to the 2003 invasion and occupation of Iraq, Secretary of Defense Donald Rumsfeld touted the ‘shock and awe’ campaign as a strategic use of overwhelming force, mostly through bombing, which was designed to cut off Iraqi lines of communication and diminish the Iraqis’ will to fight (Safire 2003; Ullman and Wade 1996). Media coverage and unclassified military footage again highlighted the use of visual technology to portray the war with familiar scenes of bunker-busting bombs splashing across television screens around the world (Stanley 2003). Added to the spectacle were front-line reports by so-called embedded reporters who managed to capture the fighting while censoring the carnage. The overly dramatized rescue of Private Jessica Lynch by Special Forces commandos was also captured using a night vision camera (Kristof 2003). These carefully monitored real-time images brought tele-spectators closer to war than ever before, while at the same time dissociating them from the human side of it. This is particularly true in the US since other international news sources, notably the BBC and Al Jazeera, showed uncensored images of refugees and casualties on both sides of the war. Meanwhile, the Bush administration banned

even the photographing of flagged-draped coffins containing the remains of US casualties. Learning from the Vietnam War, the administration realized that “electronic mass media could have a decisive effect on public opinion and political decision making” (Dunnigan 1996: 267). Seeing soldiers coming home in body bags might be good for television ratings, but it would be bad for maintaining public support of the war.

A riveting example of the everyday use of NVGs in the combat zone can be seen in the recent documentary film *Occupation: Dreamland*.<sup>5</sup> Both the documentary crew and the infantry soldiers featured in the film utilized night vision technology as they conducted dangerous missions in Fallujah, Iraq. Some of the most powerful scenes in the film—such as a house raid in which young Iraqi children huddled in a corner stare terrified into the lens as soldiers search their house for weapons and detain all the military-aged men—are captured using night vision cameras. The children appear haunting, with green skin and glowing eyes reflecting the dim light. Another poignant scene occurs during a guard duty shift as an infantryman tries to communicate in broken Arabic with an Iraqi man working in the compound. The encounter highlights the irony of possessing advanced visual technology but not having the ability to communicate properly with the local population. While the US military owns the night, serious deficiencies in language and cultural competencies make the work of occupying Iraq difficult and haphazard. Night vision enhances soldiers’ ability to see through the darkness while looking past the human beings right in front of them (fig. 4).

The disconnection between the benefits of visual technology and the inability to communicate with Iraqi civilians raises a number of questions. First, what strategic purpose does it serve to keep soldiers in the dark, so to speak, about the local population? If the military wanted its troops to be well informed about the language and customs of the Iraqis, education could easily be incorporated into units’ pre-deployment training. The fact is, however, that few soldiers, outside of civil affairs, military intelligence, or Special Forces units, get any substantial linguistic or cultural training in their area of operations—which raises another question. Why is that? Could it be that the military is concerned about soldiers identifying with the local population, of seeing ‘them’ as human beings? Would that lead soldiers, particularly those in combat units, to ask questions about why the US is in the war to begin with? Given the difficulties in discerning between so-called insurgents and civilians, how are soldiers expected to know the difference without being able to speak the language or interpret information from locals who may be willing to help find enemy personnel? Lastly, if high-tech war on one side leads to ‘guerrilla warfare’ and ‘irregular tactics’ on the other side, where is the enterprise of war headed?

## **Visual Technology and the Rules of Engagement**

In addition to overcoming the darkness, the ability to see enemies at a distance gives the US military a tactical edge over its opponents. Long-range sighting systems, such as high-powered scopes, radars, satellites, and unmanned aerial





**FIGURE 4** Infantryman on Guard Duty, from the Film *Occupation: Dreamland* (used with permission)

vehicles (UAV), assist in intelligence gathering, target acquisition, and tracking. One of the most effective devices in use by the military in Iraq is Forward-Looking Infrared Radar (FLIR). Numerous weapons platforms, such as main battle tanks and helicopters, are fitted with these sophisticated thermal-imaging devices. FLIR displays produce a grayscale image in which objects that emit heat appear white. They are particularly useful in locating personnel and equipment at night or in concealed positions (fig. 5).

A powerful example of the FLIR device in action can be viewed in a widely available digital video circulating on the Internet. I first saw this short, disturbing video at an Army leadership school for sergeants, the Basic Non-Commissioned Officer Course, during the summer of 2004.<sup>6</sup> Another sergeant, a member of the Florida National Guard who had recently returned from service in Iraq, volunteered to share the video, stored on his laptop computer, with the rest of the class. That day we were discussing the rules of engagement—the guidelines set in a theater of war that dictate when soldiers can fire upon the enemy. Firing only when fired upon or shooting anything that moves in a specified area are two examples of the rules of engagement. The Florida sergeant thought that the video demonstrated how the rules of engagement are implemented in a combat environment as the helicopter pilot seeks permission to fire from his chain of command. What is ironic about choosing this video to demonstrate the proper procedure for following the rules of engagement is that, in my opinion, the video shows a war crime being committed by US military personnel.

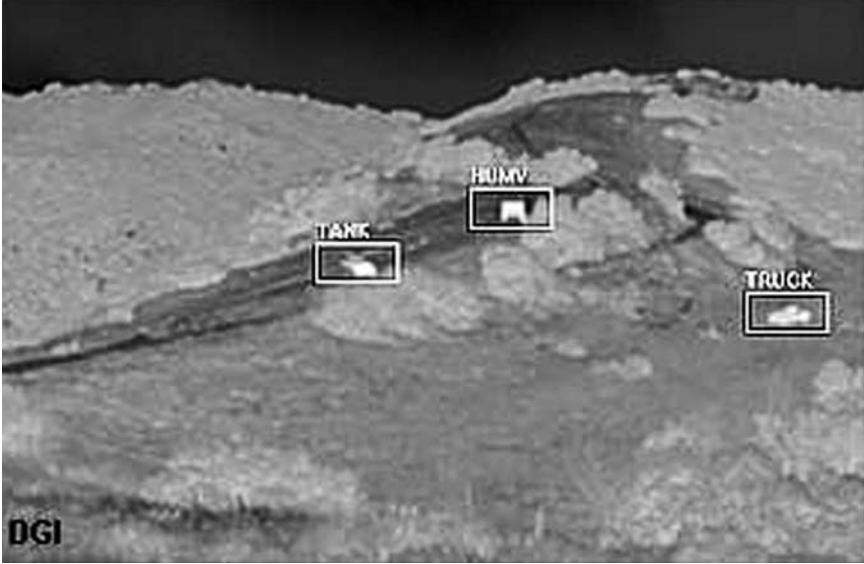


FIGURE 5 FLIR Image of Three Vehicles (Department of Defense Public Affairs Office)

I felt that the rules of engagement were violated and failed to save the lives of potentially innocent people. What is more, despite the high-tech advantage that they had over their targets, the helicopter pilots were unable to distinguish between combatants and non-combatants, which made me wonder how many other innocent civilians have been killed by US military personnel. I cannot explore this question in this article, but I do address how the military's reliance on visual technology solves tactical problems while ignoring humanitarian problems of dealing with civilians on the battlefield.

What follows is my analysis of three versions of the video that are circulating on the Internet and their significance vis-à-vis the experience of war that is being projected through visual technology. Depending on how the footage is edited and what the accompanying text has to say about the scenario depicted, three very different interpretations of the video have emerged. These interpretations are important in shaping public perceptions of the war and in understanding how the rules of engagement are implemented.

### *Version 1: 'Insurgents' Emplacing a Weapon*

The first version of the Apache helicopter gun tape opens with an image of two Iraqi men, presumed to be insurgents, walking in front of a cargo truck parked in an open field.<sup>7</sup> The voices of the Apache crew—a pilot and gunner—are overheard as they attempt to determine the range of their intended targets, which include the cargo truck, a small pickup truck, and a farm tractor.

The viewer soon learns that their main targets are actually three men, none of whom appear to be armed. According to numerous interpretations on Web sites that provide a link to this video, the three men are suspected of emplacing an improvised explosive device (IED) or some other weapon in an area where American convoys are expected to pass through. The helicopter, however, does not seem to be in any immediate danger. Unbeknownst to the alleged insurgents, the helicopter is hovering several hundred meters away, following their every move with its FLIR sighting system while aiming a 30mm cannon armed with high-explosive rounds. The crew takes an initial shot at one man in the crosshairs, whom I will call Insurgent A, but misses, sending him racing across the field toward Insurgent B, who is sitting in the tractor. As Insurgent A gets near the tractor, Insurgent B steps off, after pausing briefly to say something, and begins walking right across the screen toward the parked trucks. Meanwhile, Insurgent A has walked around the front of the tractor and to the left side of it where he reaches in to pull out a heavy cylindrical object, perhaps an artillery shell. The helicopter's crosshairs pan right following Insurgent B as Insurgent A and the tractor move out of the frame on the left. The pilot and gunner are in constant communication, and as the gunner states, "Range auto ... all right, got auto range on him," the pilot exclaims, "Roger, hit him." Suddenly, the sound of the cannon is heard going through a rapid cycle of ammunition—*rat-tat-tat-tat*—and a burst of rounds explodes around Insurgent B. The gunner makes a direct hit, sending parts of Insurgent B's exploded body careening all over the open field. The FLIR system picks up heat signatures creating a splash of bright white where Insurgent B took his last steps. There is nothing left of him but a pool of blood giving off its heat.

Unfortunately for this doomed trio of would-be insurgents, Insurgent B is not the only one hit by that first successful burst of rounds. Insurgent C, pictured in the far right corner of the screen, doubles over at the same time that Insurgent B meets his demise. The high explosive rounds fired from the 30mm cannon send shrapnel across a wide kill radius, within which Insurgent C was standing. After the gunner confirms that Insurgent B is down by exclaiming, "Got him," the pilot states, "Good," directing the gunner, "Hit the other one." The camera pans left back toward Insurgent A, who seems to be frantically unsheathing the artillery round as he crouches down to the left of the tractor. The crosshairs line up on him, and the cannon opens up with another volley of fire. Insurgent A virtually disappears under the hail of 30mm rounds. The pilot says, "Go to the right. See if anybody is moving by the truck." The camera pans right, surveying the immediate area around the parked vehicles. Insurgent C, after sustaining shrapnel injuries from the attack on Insurgent B, has crawled under the cargo truck. While the helicopter crew is scanning the area, Insurgent C's upper body becomes visible for a brief moment behind the left front tire of the cargo truck. The pilot notices him and states, "Oh, there's another guy moving right there." The gunner responds, "Good ... firing ... hit him." Rounds rain down on the truck hitting the front grill and left front tire, behind which Insurgent C is hiding, sending smoke trailing away from the vehicle. The gunner asks, "Want to take the other truck out?" to which the pilot responds, "Roger

... wait for movement by the truck.” Insurgent C has rolled out from under the cargo truck and down a slight embankment. The gunner notes that the third man is wounded, but the pilot says, “Hit him!” The gunner replies, “All right, I’m hitting the truck,” but the pilot responds, “Hit the truck and him.” The final burst of machine-gun fire shatters the back window of the pickup truck and kicks up dust and debris around the motionless body of Insurgent C.

Watching the video was disturbing on a number of different levels. First, because this version of the video is an excerpt, we can only speculate on what transpired prior to and after the events depicted. Knowing whether the helicopter crew received intelligence reports alerting them to the activities of the alleged insurgents or if they were on station conducting reconnaissance of this area—and thus being the first soldiers to have eyes on the targets—would help us interpret the circumstances of these graphic images. Certainly, from the perspective of a US service member stationed in Iraq, any vehicle movement in the middle of an open field at night would immediately be considered suspicious. However, all three men appeared to be unarmed at the beginning of the video, and the object that I interpreted as a possible artillery shell, a common component in IEDs, was not visible until after Insurgent B was splattered all over the field. The pilot and gunner never mention why these men are being fired upon, and given the fact that the Apache helicopter is nearly undetectable at night from a distance, its crew was never under direct threat from the insurgents.

Another unsettling aspect of this video is that the force used to ‘neutralize’ these three men far surpassed what was necessary. The caliber of an Apache helicopter’s cannon, 30mm high-explosive rounds, is normally reserved for engaging vehicles and equipment (granted these are usually operated by individuals who invariably get destroyed along with their vehicles and equipment). Firing on unarmed individuals with such high-powered ammunition far exceeds the guidelines of Articles 48 and 51 of the 1949 Geneva Conventions.<sup>8</sup> One would be hard pressed to say that the three individuals in the video were definitely combatants or part of some military objective. Visual technology has thus increased not only the sensory abilities of soldiers but also their capacity to commit war crimes, with helicopters targeting individuals on the battlefield and deploying lethal force that exceeds the Geneva Conventions. Even if they were combatants, the fact that the Apache crew continued to engage a wounded man (hiding under the truck) is a clear violation of the Geneva Conventions. While all wars foster dehumanization, the FLIR creates circumstances in which soldiers can see their enemies better than ever before and yet interact with them as if playing a video game.

### ***Version 2: The Original Military Edit***

The second version of the video begins approximately two and a half minutes earlier than version 1, providing a broader context for interpreting the pilot’s initial identification of the targets and the decision to engage them with machine-gun fire.<sup>9</sup> As the crew is scanning an open field, a pickup truck pulls into the frame and parks just short of the stationary cargo truck. The pilot and the

gunner discuss the situation. The conversation regarding whether the gunner had permission to fire is what the Florida sergeant I mentioned earlier wanted us to focus on. From his perspective, the pilots demonstrated how soldiers are supposed to follow the rules of engagement. The problem I have with this interpretation is that the pilot and gunner never positively identify any weapons, are never in imminent danger, and do not witness the alleged insurgents attacking friendly forces. Following the guidelines set forth by the Geneva Conventions, it is not clear that any military advantage was gained by killing these three men. It is also important to note that although this version of the film is longer and provides more context than the previous version, the question remains as to why the pilots were tasked to scan this area in the first place. If the helicopters were simply on a reconnaissance mission, the time between their spotting of the suspected insurgents and their decision to engage them seems exceptionally brief. On the other hand, if the helicopters were sent to respond to specific intelligence reports of insurgent activity in the area, the fact remains that the behavior of these three men could hardly be perceived as imminently hostile to the helicopters or any other US personnel. Thus, the scene serves as a metaphor for the whole war in that the helicopter crew initiated a pre-emptive strike against a perceived enemy that did not pose an imminent threat based on limited intelligence regarding the possession of weapons.

### ***Version 3: An Extended Edit with Commentary***

Finally, the third version circulating on the Internet offers a compelling interpretation of the events as they unfold.<sup>10</sup> An unidentified commentator, with a subtle British accent, orients the viewer to key terrain features and details about infrared technology to make his case. He contends that the three men we see in the footage—interpreted as insurgents in version 1—are actually farmers plowing a field. According to this narrator, the objects that the first two men dropped in the open field were not rifles or bombs but markers to help guide the third man who is driving the tractor. Although it is admittedly difficult to make out precisely what these men drop in the field, the most plausible part of this interpretation is the fact that fresh, evenly distributed plowed rows are easily visible in the image. As the tractor pulls into view, it becomes clear that it is pulling a plow that leaves grooves through the soil in its wake. Another important aspect that the editors of this version highlight, by repeating and encircling, is that when the pilot is asked, “Do you see them with the weapons in their hands?” the answer is “Yes.” However, it is abundantly evident in the video that none of the men have weapons in their hands when the question is being asked.

My own interpretation is closer to version 3 with some important qualifications. In my view, Iraq is an atrocity-producing situation that forces soldiers to take on a survivor mode of existence. There is an explicit reward system for confirmed kills in combat, and career-minded soldiers understand the value of combat experience. For example, members of the infantry covet the Combat Infantryman’s Badge (CIB), which is awarded to personnel who have come under enemy fire and returned fired. In performing their job successfully,

which is to close with and engage (kill) the enemy in a combat environment, infantrymen are rewarded with badges that carry weight in the military's promotion system. If we assume that the pilots were competent individuals who would not intentionally seek out innocent civilians to vaporize, then how could this have happened? After studying this nasty, brutish video, I have concluded that the gunner was more reluctant to kill the three men than the pilot was. This is especially the case with the last man who was wounded. It was the pilot who urged his gunner, "Go forward of the truck and hit him!" Not unlike soldiers in the infantry, pilots form tight bonds of trust but also experience intense peer pressure to kill on command. Even college-educated specialists like the pilots flying the Apache helicopters can buckle under the institutionalized pressure created by the military to ensure unquestioning loyalty and commitment to the mission.

Were the three Iraqi men there to plow a field or emplace improvised explosive devices? We may never know what their true intentions were. What is clear, however, is that the technological advantage offered by the FLIR did not result in capturing any enemy intelligence and did not prevent the undeniable slaughter of potentially innocent people. As Dunnigan (1996: 273) points out: "[T]he American troops closest to the fighting, namely the pilots and ground fighters, are most aware of how thin the high-tech advantage is." Although looking through a FLIR does improve one's ability to detect objects at a distance through the darkness, such a device cannot enhance one's ability to judge the proper course of action under questionable circumstances. While billions are spent in the US on new gadgets for the troops, less emphasis is placed on training soldiers in restraint and cultural competency. What if the pilots were more aware of the way of life of Iraqis rather than operating under essentialized notions of Arabs? If the three Iraqi men killed were actually plowing and not setting booby traps, would it not be useful for soldiers to know that plowing season had begun? These are difficult questions that go to the heart of the psychology of war, civil-military relations, and the dehumanizing aspects of armed conflict. I think we need to acknowledge the futility of war and interrogate the logic that prioritizes investments in technology over the widespread deleterious effects that war has on human beings on both sides of conflicts. Rather than improving our ability to cause human suffering on a mass scale, we should be looking at ways to alleviate it.

## **Virtual Reality and Beyond**

The difficult scenes discussed in the previous section perhaps foreshadow things to come. As more money is invested in lightweight battle suits and sophisticated helmet systems for the average ground-pounding infantryman, we are destined to see war from an even more individualized perspective. Much like the gung-ho space Marines depicted in the movie *Aliens*, helmet-cams will yield intense footage of house-to-house close quarters combat. Fitted with night vision and infrared like the Apache helicopter crew, infantrymen

will see war at least partially through some form of visual technology. Will this mean that, like Arnold Schwarzenegger's famous character in *The Terminator*, infantrymen will become killing machines incapable of feeling any remorse for the little green men (or children or women) exploding on their screens? This certainly seems to be the Pentagon's goal, judging by its massive expenditures on research and development. This is a fact not lost on defense contractors, who proudly showcase their latest contributions to the Future Force Warrior at expos like the International Defense Exhibition and Seminar (IDEAS) 2006 that took place in Karachi, Pakistan.

Virtual reality training is gradually working its way into the everyday lives of soldiers. Indeed, the soldier depicted in figure 6 is scheduled to hit the ground running by 2025. Yet this rapid development of military technology leaves a number of important considerations unexamined. For example, because the US and other advanced industrialized nations are so far ahead technologically, it would be futile for other countries to attempt warfare in the conventional sense, with aerial dogfights and open tank battles. Instead, guerrilla warfare and irregular tactics are the only sensible option available to the rest of the world's combatants. Iraq has shown how effective these time-tested strategies can be at stymieing a superpower. Dunnigan (1996: 260) recognizes this situation: "The big problem is that the likely enemies come in two flavors: clones of yourself and primitives. The former are easy to understand, as they are trained,



**FIGURE 6** Future Force Warrior Concept Equipped with Helmet Displays and Lightweight Weapon (Department of Defense Public Affairs Office)

equipped, and likely to fight pretty much like you are. The latter are usually guerillas or irregulars of some sort armed with yesterday's weapons, plus some of today's gadgets. The primitives are primitive only in the sense that they don't have all the technology you have. What the primitives do usually have is smarts, knowledge of the area they are fighting in, and a lot of determination."

Aside from his problematic characterization of guerrilla fighters as 'primitives', I think Dunningan describes perfectly the situation that the US is facing in Iraq today. The Iraqi insurgency is using a mixture of old and new weapons and tactics to foil the US occupation. Would the Future Force Warrior be any better equipped to deal with this situation? Other than improved body armor for protection against explosive blasts, I would say no. Again, Dunningan is in agreement when he claims (1996: 287): "Technology is not much help in guerilla operations; of more use is good old-fashioned 'getting to know the locals and the lay of the land.' As armed forces place more of their emphasis on technology, they become less able to deal with low-intensity warfare and dealing with guerillas. The next decade will reveal whether or not many, or any, nations have decided to deal with this problem head-on and trained for these 'little wars' ahead of time." I think that as long as the military-industrial complex continues to operate as it does now, with new contracts driving further research and development (and corporations profiting handsomely), token gadgets as opposed to more useful training will be the norm. Without the ability to understand the language and culture of the 'enemy', no amount of technology, visual or otherwise, will make warfare any easier than it was 3,000 years ago. What will become easier is the ability to kill on a massive scale without fully comprehending the devastation happening on the screen. Night vision, infrared, and virtual reality act simultaneously as amplifiers and filters, mitigating the experience of war.

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## Notes

1. By visual technology I mean high-powered lenses, night vision, and infrared devices such as goggles, scopes, and cameras. The advent of virtual reality, which uses computer-generated images coupled with motion sensors and three-dimensional displays, is the next step in visual technology.
2. For an extended discussion of the impact of CNN's coverage of the Gulf War on popular perceptions of war, see Virilio (2002).
3. Berms are earthen mounds used as fighting positions, like foxholes for tanks.
4. As an example, the opening scene of the popular film *Courage Under Fire*, starring Meg Ryan and Denzel Washington, depicts a nighttime tank battle in which Washington's character orders his gunner to return fire at what he perceives to be an enemy tank. He quickly learns over his radio headset that the tank his crew has destroyed was a 'friendly' tank. In other words, he ordered his gunner to commit fratricide. The audience vicariously experiences the tense tank battle, switching perspectives from the gunner's view through green night vision screens to the inside of the cramped tank.
5. For a trailer of this 2005 film featuring night vision, see <http://www.occupationdreamland.com/trailer.html>.
6. I served in the US Army as a cavalry scout (reconnaissance specialist) from 1992 to 1996 and in the US Army Reserve as a medical specialist, nurse, and health services instructor from 1997 to 2007. During that time I served in numerous units and earned the rank of staff sergeant, which is what put me in the Basic Non-Commissioned Officer Course where I first viewed the FLIR footage I refer to above. As a cavalry scout, I trained extensively with night vision goggles, laser range finders (binoculars that measure distance), thermal sights, and the sighting systems associated with TOW (tube-launched, optically tracked, wire-guided) missiles and Bradley Fighting Vehicles. In January 2005, after much soul searching, I applied for conscientious objector status and received an honorable discharge after 14 years of service. My opposition to war began with what I view as the unnecessary invasion of Iraq and grew into an opposition to war in any form. I joined Iraq Veterans Against the War in June 2005 and have been an active member since then, serving on the Board of Directors and as the New York City chapter president.
7. Follow this link to view version 1: <http://www.youtube.com/watch?v=4KHKyXYQ6TY>.
8. Article 48 states: "[T]he Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives." Article 51 states: "An attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated." See [http://untreaty.un.org/unts/60001\\_120000/1/24/00001166.pdf](http://untreaty.un.org/unts/60001_120000/1/24/00001166.pdf).
9. Follow this link to view version 2: <http://www.youtube.com/watch?v=q2HdVBuBGwE>. A message now appears on this site: "This video or group may contain content that is inappropriate for some users, as flagged by YouTube's user community. To view this video or group, please verify you are 18 or older by signing in or signing up."
10. The link for version 3 (<http://www.youtube.com/watch?v=gORLv7bGyls>) has since been removed from YouTube "due to terms of use violation."

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