

Cultural Evolution and War: From Science to Social Science

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Much has been said about the potential of cultural evolution to rid civilization from the scourge of war. Why is it assumed that cultural evolution is a positive process? Perhaps more consideration should be given to the possibility that cultural evolution may actually bring us closer to war and possibly even destroy us. Science has played a leading role in making war more and more destructive, and now social science is making similar significant contributions. When it comes to war, the two forces may combine to lead us into reverse cultural evolution.

Our track record on war is quite clear. Since the end of World War II, there have been about 130 wars which resulted in 21.8 million war-related deaths. Wars in the 20th century have killed 99 million people, a figure which is 12 times higher than the 19th century and 22 times higher than the 18th century (Sivard, 1986; 1989). 1987 goes down as the record year with more on-going wars than at any time in human history. Unlike earlier centuries in which warriors killed mainly each other, 20th century wars now kill far more civilians than combatants. This was true in World War II and even more true in the recent Gulf War and in the invasion of Panama. Is the increased carnage of innocent civilians an indication of reverse cultural evolution?

Evidence for this might come from the popular acceptance in the 20th century of massive indiscriminate killing. Indeed, this was predicted long ago in *Julius Caesar* (Shakespeare, 1623; credit must be given to David Barash [1991] for finding this gem):

Blood and destruction shall be so in use,
And dreadful objects so familiar,
That mothers shall but smile when they behold
Their infants quartered with the hands of war.

Julius Caesar, 3.2

Perhaps the epitome of this is found in the suicidal policy known as M.A.D. (mutually assured destruction) which has driven American and Soviet policy for decades. How did 20th century "culture" produce acceptance of mass killing and destruction?

Although there are other factors, the role of science and technology has been instrumental in making destruction both efficient and remote. When guns were upgraded to automated killing machines, people were slow to realize that war no longer had much to do with courage, patriotism, and the usual bravado that motivated soldiers (and the public). At the Battle of the Somme in 1916, 420,000 British troops were killed, mostly by German machine guns. The British gained nothing and learned nothing. The following year they sent another 370,000 to similar deaths at Ypres.

At first, mechanized killing was restricted to the battlefield. But in April of 1938 the Germans bombed Guernica and the following year the Italians bombed Barcelona. The pilots deliberately aimed at residential areas, an act which drew immediate public outrage and inspired Picasso's famous anti-war mural. The popular sentiment throughout the world was that pilots who killed civilians should be considered monstrous war criminals.

On Nov. 14, 1940, the Luftwaffe bombed Coventry killing 554 people, mostly civilians. The RAF retaliated with area bombing of Mannheim. During the course of World War II, the Royal Bomber Command under Air Marshall Harris ("the butcher") ended up killing 1 million Germans and rendering 25 million homeless. The Americans joined in and perfected the science of saturation carpet bombing. When the war was almost over, the Allies decided to obliterate the refugee center of Dresden for the purpose of impressing Stalin. Over 135,000 civilians were killed in a few days. Political bombing of civilians was no longer considered an act of barbarism.

In the closing days of the Pacific war, 75% of the munitions dropped on Japan were incendiary bombs designed to set Japanese homes on fire (Overly, 1980). The deliberate fire bombing of urban areas caused only slight damage to military installations. The deadly raids on Tokyo in March of 1945 left a million homeless and destroyed 267,171 buildings (Dyer 1985), more death and destruction than was caused by the two atomic bombs. All this pales compared to the Vietnam war where more munitions were used than in all previous wars combined.

Our enculturation has somehow made massive indiscriminate killing acceptable social policy. Pilots are now heroes. In the recent Gulf War, few Americans were outraged when the bombing killed innocent civilians. Many were outraged, however, when Iraq said it considered the pilots to be war criminals. Was the American public brutalized or was it brainwashed (or both)? Censored from seeing the death and destruction of the Gulf War, the public was persuaded that this was a clean, sanitary war of surgical precision.

Karl von Clausewitz, the famous Prussian military officer (Clausewitz, 1873), once observed that war is the continuation of politics by other means. The Gulf War was probably the crowning example of how to use politics (and social science) to further the cause of war. Since the selling of the war was so successful, it will undoubtedly become a model for the conduct of future wars. Governments all over the world are now scrambling to obtain the latest hi-tech weapons, the products of American scientific ingenuity. More importantly, the Gulf War was a kind of social science laboratory for testing ways to mold and control what the public thinks and knows.

William D'Antonio (Executive Officer of the American Sociological Association) has underscored the role of social science in the conduct of the Gulf War (D'Antonio, 1991). The White House and Pentagon (in concert with the television networks) skillfully employed survey research, the use of symbols, and highly selective reporting to portray a war acceptable to the public. Survey research became a daily dependent measure of public perceptions about the war. Mood management and spin control followed. Learning the lessons of Vietnam (and Grenada, Libya, and Panama), the Bush administration knew the importance of the battlefield at home: the war for the public mind. The center of the battle was the control of the media, a battle that President Bush won hands down.

The primary casualty of the Gulf War was an informed public, a tempering agent and the bedrock of any democracy. First hand reporting was blocked for the first time in any American war. Reporters producing positive stories were rewarded while those expressing criticism were censored. Good visuals with positive images were provided by the Defense Dept. and quickly gobbled up by the media. The public was flooded with images of patriotism, valor, hi-tech weapons, and an evil enemy. Dead bodies and negative images of war were censored. The public learned only what the Pentagon and the President wanted people to know. Network ratings (and revenue) soared right along with George Bush's approval score. Most governments have attempted to do the same thing in times of war, but few have been so efficient and so successful. Social science and media technology made it all possible.

The war on TV was an impressive show. The public was awed by smart bombs and precision hi-tech weapons which always seemed to work perfectly. But after the war, untidy details began to leak out. For example, the highly-touted Patriot missiles turned out to be failures which caused more destruction than they prevented. The Patriots homed in on the fuselage of SCUDs and managed only to deflect incoming missiles. The intact warhead together with Patriot debris continued to rain death upon populated areas. Of 12 videotaped SCUD encounters, Patriot missiles missed all 12 warheads. Senior Israeli scientists now conclude that the Patriots missed SCUD warheads over 80% of the time (Schmitt, 1991). In short, the Patriot missiles were successful mainly as psychological weapons used to fool the public.

After the war, we found out that the vast majority of bombs were indiscriminant "dumb" bombs, not the "smart" bombs shown in Pentagon videos. We were told that the bombing was "pinpoint," yet later we learned that most bombs missed their targets. We were led to believe that pilots were focusing on strictly military targets, yet much of the bombing was directed at destroying the infrastructure of Iraq. The Pentagon insisted that it was not "targeting" civilians, yet by destroying water supplies it knew full well that tens of thousands of children would be certain to die. Current estimates (Tyler, 1991) are that child mortality in Iraq may triple or quadruple as a result of the war. Western public health officials have estimated that a million children are malnourished and that 170,000 children will die in 1991

from war-related causes. How can anyone cheer a war which kills children by the tens of thousands but leaves the man who caused it in power?

Media Manipulation and the CNN Effect

Perhaps the most remarkable weapon in the Gulf War was media manipulation. There is nothing new about trying to control the media, but the dramatic new success in limiting and distorting information about the war made media manipulation the social science equivalent of high technology weaponry. The ability to harness and exploit the age-old fascination with war reached new heights. William James (1911) once lamented the difficulty of finding alternatives to war which are equally exciting. For those in power, finding alternatives to war has taken a back seat. Before the shooting started in the Gulf, it was clear to many that the Bush administration was determined to have a war. The real question was how to manipulate the public and avoid the divisiveness which plagued the Vietnam War.

The networks, the Pentagon, and the White House quickly went to work to prepare the public for war. Once it began, public fascination became known as "the CNN effect." Millions of Americans were riveted to the tube. Few could tear themselves away for fear of missing the latest SCUD attack or the newest Pentagon video. CNN changed its logo to a garish Hollywood-like red and orange "Gulf War" which it beamed before and after every program. The network eliminated most of its non-war news and militarized many of its regular soft news features. *Science and Technology Week* covered bomb production. *Health Week* discussed chemical and biological warfare. Even *On the Menu*, a nutrition program, did specials about military cooking. The television age which brought us a weather channel, a sports channel, and a Disney channel, now brought us a war channel.

Because reporters were heavily restricted in their own investigations, most information came from packaged military briefings which were accepted by an uncritical press. By joining in promoting of the war, the networks promoted themselves (CNN ratings shot to an all-time high). A small army of military "experts" and quote doctors were mobilized to support the brainwashing of the public.

At this point, I decided to conduct a little social science research on my own. Armed with a videotape recorder and content analysis techniques, I videotaped 27 continuous hours of CNN news in order to find out exactly how this network was portraying the war to the public. I picked the date of Feb. 15-16, 1991, a day which coincided with the first serious Iraqi peace proposal (a conditional withdrawal from Kuwait). Other peace initiatives were coming from Iran and the Soviet Union. It seemed like a day in which there might be extensive discussions about ways to end the war without an invasion.

Instead of focusing on peace initiatives, CNN (like President Bush) quickly brushed aside peace talk and continued to emphasize war. (Some of the war experts appeared genuinely worried about the possibility of an

outbreak of peace.) During the 27 hour monitoring period (which included two prime time evenings), CNN presented the views of no less than 30 different generals, admirals, colonels, and air marshals, plus a major from the Royal Fusiliers. (Interviews with the lower ranks and civilians advocating war were also numerous.) There seemed to be an endless array of war experts, but no peace experts.

In terms of frequency of exposure, President Bush was by far the most dominant personality on CNN. Other leading media stars were Lt. General Thomas Kelly of the U.S. Army, Pentagon spokesperson Pete Williams (carefully coached and groomed by media handlers), Brig. Gen. Richard Neal of the U.S. Army Central Command, and Secretary of Defense Dick Cheney.

Much controversy surrounded Peter Arnett who issued reports from Baghdad. The White House was enraged because it couldn't control Mr. Arnett the way all other reporters were controlled. So it attacked his patriotism, journalistic integrity, and CNN reporting in general. CNN caved in by emphasizing the Pentagon view of the world and by reducing Mr. Arnett's air time. Mr. Arnett ranked fairly low in visibility on Feb. 15 and was seen only about as much as Sir Patrick Hine (British Air Vice Marshall), Rear Admiral Mike McConnell (U.S. Navy), former president Ronald Reagan, and retired Major General Perry Smith, CNN's own war expert in residence.

When it came to taking sides, CNN labeled anti-war activities as "protests." All "protests" were carefully countered with pro-war demonstrations that CNN labeled as "rallies." Ironically, the pro-war "rallies" were labeled as "peaceful" while the anti-war "protests" were called "noisy." The film footage, however, showed the opposite. The "peaceful" pro-war demonstrators were chanting "bomb Iraq!" while truck drivers blasted air horns in support. Meanwhile, the "noisy" anti-war demonstrators were quietly displaying traitorous broccoli signs ("you don't like broccoli, we don't like war") a half-mile from where President Bush was vacationing in Kinnebankport. One person beat slowly on a drum.

The message was clear: CNN chose to ignore or ridicule those who advocated peace. Peace advocates were portrayed as being anti-patriotic. No attempt was made to interview them or to discuss their views. CNN went out of its way to find dozens of articulate spokespersons who favored war but avoided discussion with those who advocated peace.

CNN's bias could also be seen in the steady parade of conservative Republicans. In only one day, the network managed to squeeze in an impressive cast of heroes from the right-wing: Oliver North, Robert McFarlane, Jeanne Kilpatrick, Pat Buchanan, Richard Allen, Richard Perle, Dan Quale, and Ronald Reagan. CNN seemed to be celebrating the very officials whose political failures led to the Gulf War. While conservatives carped about CNN "balance," the fact is that CNN reporting was full of conservative bias.

In fairness to the network, CNN did present an occasional token liberal such as Paul Wellstone who advocated peaceful solutions to the war. CNN also

interviewed William Ury, a negotiation specialist, and showed brief sound bites of Iraq's U.N. ambassador. Non-military "experts" were also interviewed, but the majority echoed the military point of view. There was so little diversity of opinion that I was reminded of the old saying, "When everyone thinks alike, no one thinks very much at all."

In the long run, media control was a major factor in making the Gulf War popular. Cultural evolution has given us not only the weapons of mass destruction but also the weapons to intoxicate the public with the glory and excitement of war. Since the media has distorted reality in most other areas of human conduct (Parenti, 1986), why should war be an exception? Media performance during the Gulf War seemed to follow the media pattern of preoccupation of violence. One can only wonder what would happen if the power of the media were directed at promoting peace rather than promoting violence.

The Centrality of Science to War Efforts

The use of media technology and social science to promote war now joins the age-old contributions of science and technology in general. Human history might have been very different had it not been for the willingness of scientists to join war efforts. In 480 B.C., triremes (hi-tech Greek warships) won the Battle of Salamis in one of the great decisive turning points in Western history. By defeating the larger Persian fleet, the mainland fell under Greek rather than Persian rule which resulted in the later cultural achievements of Athens. Triremes were no ordinary warships (Coates, 1989). With an advanced hull design and 170 oarsmen, they were highly maneuverable and capable of speeds in excess of 7.5 knots. The high-performance oars were designed with exactly the right mass, balance, blade area, and gearing, all products of the brightest scientific minds of the times.

In the 13th century, Roger Bacon told the world that knowledge is power, and by power he meant military power. We like to remember Leonardo da Vinci, the High Renaissance genius, as a famous painter, sculptor, architect, and scientist. One of his main interests, however, was weaponry design (Foley and Soedel, 1986). In his letters, he referred to himself as a military engineer.

Perhaps the most important scientific treatise in Western civilization was Isaac Newton's *Philosophiae Naturalie Principia Mathematica* (Newton, 1686). Was this the product of pure scientific genius or rather the consequence of the social and economic conflicts (including arms races) of the day? Hessen (1931) contends it is the latter.

Indeed, it is possible to argue that one of the main driving forces behind the course of modern civilization has been the efforts of scientists to search for new and more destructive ways achieve power. William McNeill (1982) carefully documents the close interconnection between science, military technology, and society since A.D. 1000.

Skipping selectively through history, a few more examples might be cited. The oldest governmental scientific

body in America is the U.S. Coast Survey (subsequently named the U.S. Coast and Geodetic Survey) founded in 1807. It did not go into operation until 1816 (mainly because Thomas Jefferson took that long to get the necessary nautical instruments from England). When it resumed operation, it dismissed all civilian employees and replaced them with military personnel. During the Civil War, Coast and Geodetic Survey charts were used to blockade confederate waterways. Another example of the military influence on scientific organizations comes from the U.S. National Academy of Science. It was founded in 1863 with the charge of investigating the metallurgy used on Mississippi River gunboats (their cannons kept blowing up).

In the 1930s, the famous physics tome *Theoretical Physics* (Joos, 1932) was dedicated to furthering the ambitions of the Fatherland (this dedication was deleted in subsequent editions). Today, many physics textbooks cover nuclear energy and nuclear reactions but ignore Hiroshima, Nagasaki, and nuclear weapons in general. The role of science in developing nuclear weapons is of course well-known. Less well known is the role of science in almost every other facet of the military. Over two-thirds of all academic computer science research is funded by Dept. of Defense agencies. About a quarter to a third of all American scientists and engineers work on military projects.

A quarter-century ago, Nieburg (1966) noted that while science claims to be amoral, it has contributed to evil of monumental proportions. He deplored the fact that science was becoming nationalized and contributing so heavily to the military-industrial complex which resulted in basic changes to American society. About the same time, Rabinowitch (1963) questioned the ability of democratic governments to cope with the problems raised by the scientific revolution. Both scientists now seem like prophets.

Today, Americans are told there can be no peace dividend. We must budget 65 billion dollars for B-2 bombers so we can penetrate and destroy the Soviet Union. NASA has been converted from the scientific exploration of space to the militarization of space. We have mapped every wrinkle on Earth, not for science, but to lock the data into computer guidance systems to improve the C.E.P. (circular error probable, the radius around a target where a nuclear warhead has at least a 50% chance of falling).

Perhaps scientists should learn from Dwight Eisenhower who argued that the production of every gun, warship, or rocket is fundamentally a theft from society. "The world is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children." (Eisenhower, 1961.)

Another general who knows more than a little about war (Bradley, 1986) warned that our knowledge of science outstrips our capacity to control it. "We know more about war than we know about peace, more about killing than we know about living....Not until Pearl Harbor did we learn that noninvolvement in peace means certain involvement in war."

Some will say that all the talk about "peace" is political rubbish which should be carefully avoided by all true scientists who must be pure, objective, and uninvolved.

For better or for worse, science has been one of the chief causative agents in our cultural evolution. We would like to think that the overall contribution of science has been positive rather than negative, but this is not an easy case to make. Clearly, science is part of the problem, and it is appropriate that science take the lead in being involved in the solution.

In the final analysis, cultural evolution seems amoral. We can count only on individuals themselves to devote their personal and professional energy toward peaceful solutions and to oppose those who support or exploit violence. In an era when it is getting easier and easier to fool the public, much work remains if we are to make cultural evolution a positive process.

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