
FOREWORD: THE NEW INTANGIBLES

Alvin and Heidi Toffler*

The way any society engages in conflict reflects the way it does a lot of other things—especially the way its economy is organized. And just as the industrial revolution industrialized warfare, and mass production led to mass destruction, with Clausewitz as the theoretical genius of the era, so today the entire society is going beyond the industrial age—and taking the military with it. This turns out to be a revolutionary moment in the fullest meaning of that much over-worked word.

A true revolution occurs when the entire structure of a society changes, not just when the palace and the local television station are captured by “coup plotters.” In a real revolution, civil institutions fall into crisis. Family and role structures change. Other changes shake the culture and the value system. Technological breakthroughs (or breakdowns) create an economic upheaval. Taken together, all these produce something far more profound than “revolution” in the customarily narrow sense of the word. And this revolution in the larger sense causes a revolution in military affairs as well.

*Alvin and Heidi Toffler are partners in the strategic advisory firm Toffler Associates and the co-authors of *Future Shock* (New York: Random House, 1970); *The Third Wave* (New York: William Morrow and Co., 1980); *Powershift: Knowledge, Wealth, and Violence at the Edge of the 21st Century* (New York: Bantam Books, 1990); *War and Anti-War: Survival at the Dawn of the Twenty-First Century* (New York: Little, Brown and Company, 1993); and other works translated into some 30 languages around the world. This foreword is condensed from an interview at RAND, Santa Monica, August 14, 1997.

Today's Third Wave transformation is as deep in its way as the Neolithic and industrial revolutions that, respectively, launched the great First and Second Waves of change in history. Moreover, it is faster and more global in character.

INTANGIBLE ASSETS

At its heart lies a shift in the relationship between tangible and intangible methods of production and destruction alike. Knowledge, in its broadest sense, has always been a factor in the economy. Today, however, it has moved from a peripheral to a central position, where ideas, innovation, values, imagination, symbols, and imagery, not just computer data, play more and more important roles.

The same shift toward intangibility is evident in military affairs. In the past, intangibility in military matters usually referred to morale, leadership quality, courage, and strategic insight. Today all of these remain important, but intangible assets also include what is inside our data banks as well as the skulls of our soldiers. They include the power of software, the ability to blindside an opponent's information technology, the superiority of information collection and dissemination, the compatibility of information-enhancing tools, and much more.

Just as each previous "wave" changed the nature of warfare, so, once more, a revolution is transforming the military in parallel with the economy. What is known as the Revolution in Military Affairs or RMA, therefore, is extremely important, but it is, nevertheless, just one facet of the larger civilizational shift, and it needs to be understood in that context. Seen in this light, it is likely that as the entire economy moves from the tangible to the intangible, the RMA, too, will inevitably place increasing emphasis on the value of intangible assets to the military.

None of this is to suggest that tangible, material resources and technologies are going to vanish in a puff of dematerialization. Obviously, things matter, and weapons matter more than most things. Software still needs hardware. Soldiers cannot eat data. Nonetheless, the fundamental relations between the tangible and what might be called the "new intangibles" are increasingly crucial to military effectiveness, in both waging war and trying to prevent it.

As is true in the case of the economy, the military's transition from Second Wave massy tangibility to Third Wave demassification and intangibility is incomplete. America is the source of the most stunning knowledge-enhancing technologies, and most of its workforce is engaged in one or another form of knowledge work. More Americans are employed in making computers, software, and related goods and services than in manufacturing cars. Nevertheless, the United States still has a residual sector of the economy based on low-skill muscle-work. And the U.S. military reflects a similar duality.

This is not unreasonable, given the stage of transition the United States is in, and the threats it may face in the future. But it explains why many in the military place an enormous overemphasis on large-scale, heavy weapons systems as distinct from their harder-to-define, harder-to-quantify, and harder-to-understand intangible counterparts.

The truth is that in both the economy and the military we still do not know how to organize, enhance, protect, and deploy the new intangibles for maximum benefit. Most businesses have not yet learned that to get the most out of information technology requires substantial reconceptualization and reorganization of the work to be done—that Third Wave tools applied to a Second Wave organization deliver only a fraction of their potential. The military has barely begun to recognize this as an issue.

The business community is troubled by the ambiguities of terms like “knowledge management” and “intellectual capital.” The defense community is correspondingly troubled by the imprecision of even fuzzier concepts surrounding the new intangibles. We have not even arrived as yet at broadly acceptable definitions of concepts like “information warfare” or “knowledge strategy,” “cyberwar” or “netwar,” and “information dominance” or “information superiority.”

It would be foolish, in the interests of analytic convenience, to define the role of the new intangibles too narrowly. Nor should the early lack of clarity and quantifiability lead anyone to underestimate the revolutionary importance of what we cannot fully understand and what we cannot measure. That would be like the drunk who justifies

searching under a street lamp for a key lost miles away, because "here is where the light is."

In Athena's Camp is a vital antidote to such thinking. The distinguished authors in its pages may differ on much; but they largely agree that winning the conflicts of tomorrow, both large and small—or better yet, preventing, limiting, or mitigating them—will increasingly depend on how the new intangibles, including everything from satellite-based tactical intelligence to strategic perception management at the geopolitical levels, are exploited—whether we agree on definitions and precise measurements or not. As the Third Wave further transforms the economy, society, and global power relations, the importance of the new intangibles to the military will only grow.

So will the significance of intangibles that are not under the control of armed forces, or even of governments, for that matter. In the era of intangible weaponry, some of the biggest guns of all are deployed by the media.

BLURRY BOUNDARIES

The United States currently has some very big "media howitzers" that nobody else has. It has Hollywood. It has CNN. In short, the most powerfully pervasive media in the whole world. But while paranoids around the world regard these media as witting ideological agents of the U.S. government, Washington not only does not control their output, it does not even have a sophisticated grasp of how the media impact global affairs.

Arab organizations recently charged the Disney company, for example, with promoting anti-Arab violence in a movie called *GI Jane*, in which Arabs are "massacred" by the protagonists. Similarly, China has protested against a Disney film about Tibet, charging that it promotes support for separatists. Arabs and Chinese are hardly alone in supposing that because the media in their own countries are heavily influenced or controlled by government, the same must be true of the U.S. media.

Americans are no less cynical about governments, but by and large they know that Disney, like most corporations, is more driven by profit considerations than by the wishes of the White House, the CIA,

or Foggy Bottom. Disney has no Assistant Secretary for Asia, no desk staffed by old Middle East hands. The films of Disney and other Hollywood studios reflect the currently fashionable views of Hollywood stars, screenwriters, and producers far more than U.S. foreign policy, which is at best so vacillating and contradictory that it is often hard to know if it exists at all.

Indeed, it may be that companies like Disney or CNN, with their powerful influence on public perceptions, indirectly influence the U.S. government's output of foreign policy more than the government influences their output of images.

Moreover, America's near-monopoly of powerful Second Wave media will not last. The "howitzers of the mass media," for example, will not long remain the property of the United States or, for that matter, the West. There are going to be Asian Rupert Murdochs and Muslim Ted Turners as the skies fill with private satellites and channels of communication continue to multiply.

Nor will the mass media dominate forever. While the Second Wave mass media are still spreading into previously unfilled markets like Eastern Europe, Russia, and parts of Asia, the new media of the Third Wave include powerful new technologies that "de-massify" audiences and permit one-to-one customized communication. They also put cheap diffusion power in the hands of anyone with access to the Internet. Marshall McLuhan once said that the photocopying machine made everyone his or her own publisher. That was true on a tiny scale. The Internet makes everyone a potential media producer on a global scale.

Thus any idea that the U.S. government or its military should attempt to rationalize or to impose broad controls on the U.S. media in the interest of a coherent information warfare doctrine is anachronistic and counterproductive. The further a country advances toward Third Wave economic and social systems, the less likely central censorship or control will work. Third Wave economies thrive on open ideas and information systems, the irrepressible Internet being the most obvious example. The attempt by the Soviets to micro-manage opinion through monopoly control of the media, and their efforts to quarantine the population against news and opinion from the outside world, stifled the spirit of innovation—and hence the

very technical and economic progress that they needed to survive. The Soviets, in fact, waged information warfare against their own people and shot themselves in the brain.

This having been said, however, the line between the military and civilian sectors in the United States is blurring, raising prickly new questions about who exactly is responsible for what.

The strength of the United States depends as much on its civilian communications and information infrastructure as it does on its purely military capability. Without this infrastructure, its economy would stutter to a halt very quickly. But the civilian economy's near-total dependence on computers, telecom systems, and electronics creates strange new vulnerabilities as well. If an adversary state were to launch a missile attack on, say, Los Angeles—a possibility one brash Chinese official alluded to during the 1996 crisis in the Taiwan Straits—it would without question be regarded as an act of war requiring a military response.

But what if some adversary—state or nonstate—employed intangible means to damage or destroy that city's computer networks, including those needed by its police, airport authorities, electrical systems, banks, and the like? Even assuming the source of the attack could be identified and verified, would the situation call for a military response? Whose responsibility would it be to retaliate and how? And what if, at the same time, riots were provoked in the city by televised scenes broadcast from pirate transmitters in Mexico or Mexican airspace, showing false but convincingly gruesome police or military brutality against Latinos in L.A.? If someone were engaging in information warfare against the United States from both inside and outside the United States, would retaliation be the responsibility of the FBI—many of whose computers and systems are outworn relics—or would some of the responsibility fall to the military?

The biggest boundary blur of all is that between “foreign” and “domestic,” so that a new term has been invented: “intermestic.” As the informationalization of the economy proceeds at an ever-accelerating pace, military thinkers, strategists, and planners will need to broaden their focus beyond what have been conventionally regarded as “military matters.” That means worrying more than some U.S. military leaders do at present about the civilian economy's

new intangible vulnerabilities and especially its links to the fast-changing global economy.

DEEP COALITION

The distribution of power and the alignment of states and nonstate actors is already changing dramatically as a result not simply of the end of the Cold War, but of the impact of the Third Wave. Today's changes foreshadow conflicts involving complex coalitions. To reflect this new reality, we recently introduced the concept of what we call "deep coalition."

Deep coalition stands in contrast to the Gulf War alliance, which was the last Second Wave (i.e., industrial age) nation-state coalition. The emergent global system is populated by nonstate actors of increasing importance, both in numbers and diversity. In testimony before the U.S. Senate Foreign Relations Committee in 1975, we pointed out that there were then already over 3,000 international nongovernmental organizations or NGOs in every field, from ceramics and metallurgy to religion and sports. Today there are over 25,000.

Nonstate actors are not only increasingly important, but may sometimes even take over or mutate into states. A *de facto* deep coalition—instead of being limited to nation-states as in the Gulf War alliance—might consist, for example, of three nation-states, fourteen civil society organizations, a narcotrafficante here or there, a couple of private corporations with their own self-interests at stake, an individual speculator, and who knows what other components. The deep coalition involves players at many levels of the system. It is multidimensional, with all of these groups operating all the time, in continuous flow—multiplying, fissioning, then fusing into others, and so on. It is part of a nonequilibrium order in which there may be instability at one level and temporary stability at another. Unlike the nation-state system that emerged in the wake of the Treaty of Westphalia of 1648, the new system is based less on "balance of power" relations among major nations than on the ability to configure the right combination of players at every level. More important than the balance of power is the "power of balance"—the ability of a major state to keep its senses in the midst of this turbulence, and to

match its economic and military capabilities with high-level knowledge resources.

The world, thus, is entering into a global order—or disorder, as the case may be—that is post-Westphalian, and post-Clausewitzian. It is something new. In a dialectical sense, it bears some resemblance to the pre-Westphalian order of diverse kinds of polities, but it involves a much higher order of complexity among actors, and, above all, it changes at hyper-speed.

That is why the traditional, nation-state concept of coalition warfare must be rethought—something the Pentagon, the National Security Council, and the White House all seem unable to do so far.

Driven by the shift in the role of knowledge in the new wealth creation system, these changes, however, are only part of a larger historical reconfiguration of the global power system that can be understood only within a theoretical framework.

A THEORY OF CONFLICT

Any theory of social or political change unaccompanied by a corresponding theory of conflict is not worth the paper or digital storage expended on it. In *War and Anti-War*, we outlined a “wave theory of conflict,” which, we believe, can help us better understand many of today's conflicts, and to anticipate others that may lie ahead. Much of what appears in the pages of *In Athena's Camp* is, we believe, compatible with that theory.

No significant socioeconomic change takes place without conflict, especially large-scale, high-speed economic change. For the most part, the conflict takes cultural, religious, social, or political forms, but under some circumstances the result is violence.

When a new system for wealth creation arrives, its spread is obstructed by the traditions, codes, laws, tax regulations, administrative roles, family structures, and moral attitudes of the preexistent system. The elites of the old system—facing a loss of authority, prestige, and economic and political power—typically cling to the old system as long as possible. At some point, as the new system develops and spreads, new elites associated with it demand and fight for change.

That fight may take the form of demands for free trade or protection, for changes in taxation, labor law, or immigration policy. It may take cultural forms in literary, musical, and artistic disputes between modernists and traditionalists. It may take political forms with struggles over nationalism and centralization versus localism and decentralism. It may even wear the garb of religious or ethnic conflict.

What makes wave conflict so far-reaching and often so passionate is that a new system for creating wealth touches on all these. It is not just a matter of who gets rich and who does not, although that is surely a key part of it. Wave conflict is a struggle over an entire way of life—a civilization.

For example, when the industrialization process or Second Wave reached a certain point in Britain, the country saw a prolonged political battle between First Wave agrarian elites and the rising Second Wave urban-industrial elites. In Britain this conflict was contained within the framework of politics and culture. By contrast, in the United States, First Wave/Second Wave conflict exploded into the Civil War, with a rising urban-industrial North fighting a South ruled by elites devoted to the preservation of an agrarian, slave-based way of life. The victory of the North committed America for the first time to full-speed industrialization. In Japan the Meiji Revolution also posed industrializers and modernizers (whose troops carried rifles) against feudal elites (many of whose troops still wore Samurai swords).

On a larger, global scale, the colonial wars of the 19th and early 20th century pitted machine guns against lances as Second Wave industrial powers in Europe, North America, and Japan fought and conquered First Wave agrarian countries in Africa, Asia, and elsewhere.

In fact, this collision of civilizations is much larger and more encompassing than the so-called “clash of civilizations” set forth by Samuel Huntington, whose view, in our judgment, posits more or less static and unchanging civilizations (mainly synonymous with religions) and radically underestimates the impact of economics and the technological revolution. We, too, believe we face a “clash of civilizations” but that Huntington’s civilizations are actually religions or cultures and, as such, form only a subset of what we call a civiliza-

tion. Thus, like the agrarian civilization before it, industrial or Second Wave civilization had not only a Christian or Judeo-Christian variant, but Confucian, Hindu, Muslim, and other variants as well.

The conflict of civilizations defined in this much larger and more inclusive sense is a "super-struggle" or "master conflict" that triggers many tributary disputes that appear to be based on religion, ethnicity, or "thousand-year-old hatreds," but often derive from the larger economic and civilizational collision.

Thus the former mayor of Belgrade explained the battle over Sarajevo as a war of "the mountain people against the city people." In Afghanistan one saw the Taliban forces attempting to impose a constricted village-based morality on the urban population of Kabul. We believe that a close look at many other contemporary conflicts would reveal an underlying split between rural and urban—First Wave and Second Wave—people and interests.

The potentials for conflict are even more complicated in some parts of the world because the theory of conflict includes the concept of concurrence—the fact that a society may be undergoing more than one wave of change at a time.

Brazilians are killing Amazonian Indians to seize land for further agriculturalization as the First Wave completes itself on the planet. Elsewhere in Brazil, massive Second Wave industrialization proceeds—with its assembly lines, smokestacks, traffic jams, and pollution. In recent years, the Third Wave of informationalization has surged across parts of Brazil, producing its own set of economic needs and opportunities, a computer culture among the middle-class young, and other challenges to the values and political power of the country's First and Second Wave interests.

In China, close to a billion peasants still live under First Wave conditions, while Second Wave industrialization proliferates low-tech, low-wage factories and swells the urban-industrial population. Concurrently, a small but growing group of Third Wave entrepreneurs, software designers, programmers, network integrators, cell phone system operators, and their employees form a new culture that has more in common with Singapore, Taiwan, Bangalore, Vancouver, and Silicon Valley than with other Chinese. Their Third Wave interests are not the same as those of agrarian

China or, for that matter, of traditional, industrial, urban China either.

TRISECTION

Concurrent internal waves of change, each bearing its own potential for conflict, are mirrored on a macro scale at the global level. Thus, at the global level we are moving away from a bisected model of power toward a trisected one. Whereas power was once split between agrarian states on the bottom and industrial states on top, the Third Wave knowledge-based system of wealth creation, as it wedges its way into the world, brings a new third tier of power to the globe.

In the emergent “trisected” power structure, those states whose Third Wave sector is most developed command the heights, industrial smokestack states are camped in the middle, and agrarian states remain on the bottom. So clear is this trisection by now that we find everyone scrambling competitively to move up to “higher value added” economic production based on information-intensive technologies. This includes agrarian states seeking, as they put it, “to skip a stage.”

One of the most fundamental of “grand strategy” questions, therefore, is how these three classes or groups of societies should relate to one another.

A question frequently asked us as we travel through what is still patronizingly termed the “developing world” is whether this trisection brings with it a permanent “neo-neo-colonialism”—in which the states furthest along in the Third Wave transition will necessarily dominate the rest of the world.

We regard that as an unlikely, or at most, a transient condition. During the 19th century, the European imperial powers were able to exploit their dominance for long periods. The British imported cotton from India and Egypt (at prices negotiated with soldiers or gunboats nearby); manufactured clothing in Birmingham, Manchester, and Leeds; and sold it back to the colonists (at prices set with the same soldiers or gunboats in view). The raw materials came from the colonies, but the factories stayed in Britain.

The difference now is that in Third Wave economies, factories often count for less than the knowledge needed to run them. And while it is easy to keep a factory in, say, Leeds, it is much harder to keep knowledge there.

Knowledge, despite intellectual property treaties, has a way of seeping out, or, worse yet, becoming obsolete. That, moreover, includes not merely economic knowledge, but military knowledge as well. How the overarching question about neo-neo-colonialism in a tri-sected world is answered will have much to do with whether the world disorder will remain within "tolerable" bounds.

This, then, is the larger historical and geopolitical context in which this volume appears. David Ronfeldt and John Arquilla not only make profound contributions to current worldwide debates about information war, war in the information age, Third Wave war, or netwar and cyberwar (their own preferred terms). They bring together some of the most acute and brilliant analysts of future conflict. *In Athena's Camp* makes possible a significant leap forward in our understanding of the strange and sometimes dangerous new world we inhabit.

Copyright 1997 by Alvin Toffler and Heidi Toffler