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The Tofflerian Paradox

Robert J. Bunker

Claremont Graduate University

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The revolution in military affairs (RMA) debate and what it means to the US Army’s future is widely recognized. In April 1994, the US Army War College Strategic Studies Institute held its annual strategy conference, “The Revolution in Military Affairs: Defining an Army for the 21st Century.” The conference focused on a phenomenon that “poses as many challenges as it offers opportunities to America’s Army and its leadership. The RMA changes the way war will be conducted. America’s Army must be prepared with the appropriate doctrine and organization, as well as with the advanced technology that the RMA offers.”

Alvin Toffler, a keynote conference participant, and his wife Heidi, have significantly influenced Army RMA theoretical thinking. Their best selling books—Future Shock, The Third Wave and Power shift—have made them influential and widely read 20th-century futurists. Their 1993 “tour de force,” War and Anti-War: Survival at the Dawn of the 21st Century, further establishes their dominance in this subject area. Senior Army leaders such as Army Chief of Staff General Gordon R. Sullivan and US Army Training and Doctrine Command (TRADOC) Commander General Frederick M. Franks Jr. turned to the Tofflers for insight. Such important theoretical works as The U.S. Army in Transition II and War in the Information Age bear the Tofflers’ imprint.

Because of the Tofflers’ acclaim, their theoretical RMA insight and the position they hold as today’s best-known and respected futurists, no real critical variance with their ideas has developed in military literature. At most, we have witnessed Colonel Richard M. Swain’s refreshingly candid February 1994 Military Review book review and Steven Metz’s cautionary statement in the Winter 1994–1995 Parameters review essay—“The popularity of the Tofflers’ book in the US military is understandable, but worrisome.” Given the issue’s importance—the Army’s future as an effective 21st-century warfighting institution—Tofflerian theory attributes that are conceptually flawed should be forcefully acknowledged.

With this perspective in mind, I posit that the war forms developed in War and Anti-War, specifically First and Second Wave war, are overgeneralized and distort Western warfare’s historical development. As such, the war forms do not significantly further RMA theory and potentially pose a great liability. Still, these terms are becoming accepted by Army scholars because of the Tofflers’ great theoretical influence.

“The Waves of Warfare” scheme, illustrated in Figure 1, was included in Army Focus 1994: Force XXI, an official September 1994 Department of the Army publication. This unfortunate trend must be reversed before these concepts become too firmly ingrained in Army RMA literature.

The Tofflers’ War and Anti–War thesis is straightforward: “The way we make war reflects the way we make wealth—and the way we make anti-war must reflect the way we make war.” Based on this perception, war is viewed as a reflection of wealth that subordinates it to society’s prevailing production mode. Similar to Marxist materialism, without the Hegelian metaphysics, this theory of “super-civilizations” resides in a paradigm that views human history as three great eras or waves as reflected in Figure 2. A civilization wave can exist side by side with other civilization waves and manifest its own unique cultural variants such as European or Japanese Second Wave industrialism. It is also thought that a clash of civilization waves may well present the 21st-century world conflict pattern.

First Wave civilization is based on the agricultural revolution occurring 10,000 years ago that led to permanent settlements and the rise of organized states. Second Wave civilization is based on the 300–year-old industrial revolution founded on the introduction of the steam engine, factory organization principles, Newtonian concepts and Descartian philosophy. Third Wave civilization, now emerging, is based on the knowledge revolution introduced by computer–related technology. Each civilization wave develops its own unique social structures based on distinctive economy, media, policy and family forms.

Tofflerian War Forms

Each civilization wave also develops its own unique war form. A war form is envisioned to represent a true military revolution as opposed to a subrevolution based on technological change that somehow modifies an existing war form by either adding new elements or creating new combinations...
The Waves of Warfare

1864–5 1914–18 1939–45 1963–73 Panama and the Gulf War

First Wave Warfare (Agrarian)
Grant's late Civil War Campaigns

Second Wave Warfare (Industrial)
The stalemates of World War I
Marshall's Campaigns to win World War II
1st and 2nd Wave confrontations in Vietnam

Third Wave Warfare (Information)

Figure 1. In their book War and Anti-War, the Tofflers describe three waves of warfare: agrarian, industrial and information age. Operations Just Cause and Desert Storm represent the first campaigns of the third wave. Each wave runs concurrently, as well as sequentially. US Armed Forces may find themselves facing opponents fighting within any one of these waves, or within a combination of them.

out of current elements. A true military revolution "occurs only when a new civilization arises to challenge the old, when an entire society transforms itself, forcing its armed services to change at every level simultaneously—from technology and culture to organization, tactics, training, doctrine and logistics. When this happens, the relationship of the military to the economy and society is transformed, and the military balance of power on earth is shattered."9 Viewed from this context, the first two war forms represent military revolutions just as significant in scope as the Tofflers' emerging Third Wave war form. Further, they provide the historical foundation that anchors Third Wave war forecasts.

First Wave war is based on an army that engages in seasonal fighting and is poorly organized, equipped and led. Pay is irregular (usually in kind), orders are verbal and combat is based on face-to-face killing. This war form is primarily a clash between rulers, with ancient China's Ch'in state, classical Greece and feudal Europe being given as primary First Wave civilization examples. The Roman legions at their height are mentioned as a notable exception to this generalization.10

Second Wave war exists in an environment characterized by mass-produced and standardized weaponry, the conscription of mass armies and the shift to unlimited war. Armies become standing and are led by war academy–trained officers who rely on written orders. This period, considered the Machine Age, produced the machinegun, mechanized warfare and entirely new tactic forms. This war form reached its apex with the development of nuclear weapons of mass destruction. Second Wave war is conducted by the 19th- and 20th-century nation-states where war is no longer a struggle between rulers, but one between peoples engaged in immense attrition struggles to destroy each other's main forces and, as this war form developed, societies.11

Systematic Problems

There are historical and methodological problems with these war forms. The first is a historical one—the generalization of all First Wave armies as poor fighting institutions. The Tofflers note that the Roman legions were a notable exception to such agricultural–based armies. There are many other contradictory historical exceptions to this characterization.

Not even mentioned is the Mongols' military system. This overlooks Subotai's brilliant campaigns into Central and Eastern Europe from 1237 to 1241.12 Byzantine battlefield tactics and strategic perceptions should also not be forgotten. Maurice's Strategikon is the product of an advanced military system that for centuries toned back the onslaughts of many foes.13 The well-developed logistic systems of Charlemagne and Henry the Fowler, the latter whose lineage created the Holy Roman Empire, are two other notable exceptions to this improperly conceived generalization.14

The second problem concerns classical and medieval European civilizations existing together within

Tofflerian Waves

<table>
<thead>
<tr>
<th>Wave</th>
<th>When Developed</th>
<th>Mode of Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>8000 B.C.</td>
<td>Agricultural</td>
</tr>
<tr>
<td>Second</td>
<td>~1690 A.D.</td>
<td>Industrial</td>
</tr>
<tr>
<td>Third</td>
<td>Current</td>
<td>Knowledge</td>
</tr>
</tbody>
</table>

Figure 2.
the First Wave. Pigeonholing them within an agricultural super-civilization ignores that the classical and medieval worlds already represent distinct civilization types, each with a specific economy, ideology, political and military form. Medieval Europe was founded on a true military revolution based on using horses in warfare and the heavy infantryman's demise. "The supremacy of cavalry in the Middle Ages had been as much moral and social as technical. Developed because of its mobility, endowed with a total social and economic dominance, it had for centuries a virtual monopoly of military activity. Foot soldiers were despised auxiliaries." This revolution transforming classical society into medieval society is absent from the Tofflerian war forms.

The third problem comes from characterizing early modern Europe, with its own distinct military forms based on dynastic struggles, as existing within the First Wave super-civilization type. This period, which ultimately caused the ancien régime, is based on a mercantilist economy, representing a transition from feudal manorialism to industrial capitalism. The sophisticated 18th-century Prussian military system—the ultimate expression of this military tradition—would be categorized by the Tofflers' typology as a First Wave fighting force on the same level as a barbarian tribesmen raiding party. Thus, another true military revolution witnessing medieval society's end and the rise of a new one with its own distinct war forms—first based on mercenary and later on professional standing armies—is also absent from the Tofflerian typology.

The fourth problem concerns the Second Wave war form's historical characterization. As currently conceptualized, the Second Wave represents an early industrialized form of attrition army. This doctrine, generally composed of a massive artillery barrage followed by a frontal assault, was prevalent from the Napoleonic wars well into World War I. The 1916 World War I Somme Campaign is a perfect example of this war form where defeat was effected by the machinegun and barbed wire combination. Massive artillery barrages were unable to reach German machinegun crews who waited them out in deep underground bunkers and then reestablished their firing positions in time to cut down the advancing waves of overburdened British infantrymen. Additionally, no mention is made of German operational art, based on the blitzkrieg concept, giving rise to our modern war form. This concept recognizes the devastating effect one army can have on another by driving into its rear areas and paralyzing its decision-making structure. Even the Fourth Generation War theorists make this distinction with their concepts of Second and Third Generation war.

Finally, modern warfare attributes—the Army's AirLand Operations doctrine—are a logical extension of German-inspired operational art brought 50 years into the future and not the revolutionary new Third Wave war form as the Tofflers consider it. "What [General Donn] Starry and [Major General Donald R.] Morelli did, without necessarily making it explicit, was to place knowledge at the center of warfare as well. Thus, Third Wave warfare, as we saw it in the Gulf [War], shared many characteristics of the advanced economy." From this perspective, the Wehrmacht had already placed knowledge disruption at their doctrine's center half a century ago.

The perception that AirLand Operations is revolutionary arises because the Tofflers' modern war concept is outdated. They view massed troops in trenches and dug-in bunkers simply engaging in frontal assaults as attributes of modern warfare. While much Gulf War technology does represent the embryonic development of an advanced Western war form, Army doctrine is still firmly tied to modern warfare principles based on Clausewitzian concepts. America's Army, while the world's premier land force, should still be thought of as a modern warfighting institution. While it does possess qualitatively advanced "strap-on" technologies, these alone do not make it a future force. It will be decades before our doctrine and tactics adjust to still emerging technology currently transforming what we know as modern warfare.

AirLand Operations doctrine may be considered revolutionary when viewed against older Army attrition doctrine, but it does not represent an emerging futuristic war form. The Tofflers would have done better to look into the radical concepts of the "scan, swarm, strike and scatter" battle sequence, deliberate noncontiguity on the battlefield and the elimination of the tactical logistic rear inherent in some versions of TRADOC's Army 21 Interim Operational Concept. This advanced concept, existing years before the Force XXI concept, represents an alternative conceptual view of AirLand Operations doctrinal follow-on.

A Precarious Foundation

War form problems arise because Tofflerian waves are based on economic production modes set at the super-civilization level. Therefore, they exist at too high an abstraction level to account for actual Western warfare pattern changes and, because of its close interrelationship, society. The lack of military history expertise of these scholars further compounds this situation. For these reasons, the Tofflers provide a future Third Wave vision that, from a military perspective, is unsupported by the past. As discussed, their war form concepts are at odds with
much of Western military history.

Difficulties also exist with these war forms in their relationship to specific European production modes that have been touched upon. Because of this conceptual problem, the two earlier war forms are inexact sciences at best, but they are all wrong because it could not breed like animals. This resulted in the "just price" concept that it was mostly wrong to sell an item for more than its worth and prohibiting usury, the taking of interest on a loan. The "mercantilist economy" concept was that it was a precious metal that formed the sinews of war. This economic limited wealth theory led to bullionism—the stockpiling of gold and silver that an economy had minimum monetary needs to function. Capitalism, on the other hand, saw money as a commodity existing in a self-regulating market where negative and positive trade balances and minimum monetary needs were no longer a viable concept. Each divergent ideological view of money reflects unique European production modes.

As the leading 20th-century futurists, the Tofflers were among the first to recognize that society, and later warfare itself, was changing based on technological advances and our altered relationship to historical accuracy behind each competing theory. But with an invalid Tofflerian war form, we have to predict a far different military future than the one currently existing.

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