MILITARY IMPLICATIONS OF SOCIETAL VULNERABILITIES

by

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(Editor's Note: *In this paper the authors probe for new dimensions in the field of strategy. While doing so they provide some stimulating thoughts for all who are concerned with finding ways to adapt military methods to existing conditions.*

The authors start with the premise that today's civilizations are characterized by interdependence and modernization. Then they go on to point out that interdependence proliferates the channels through which nations can influence one another, while modernization intensifies societal vulnerabilities.)

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INTRODUCTION

MILITARY POWER IS OUT OF PHASE WITH SOCIETAL CHANGE

Is there a role for military power as we know it in a dramatically changing world? All around us revolutions of the most fundamental kind are taking place in man's existence patterns. In the course of the greatest migration in history the world is becoming urbanized; natural support structures are being replaced with synthetic environments; and political consciousness and activism are moving from the inner councils to the streets.

Changes so drastic would seem to require an institutional response; but the military—here and in other nations—has noticed them only to the extent that they play havoc with internal management and troop morale. The young recruits from the new societies—urbanized, technologically oriented, and politically knowledgeable—have proved singularly unwilling to accept traditional beliefs about training, discipline, and the treatment of soldiers. A number of mutual accommodations had to take place and an endless literature, in many languages, has come into being to chronicle military adjustments to societal change.

But for military leaders to conceive of the societal revolutions only in internal terms is a classic example of myopia. The more important issue—and the concern of this paper—goes far beyond the impact of recruits on the military. It is the impact of the

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military on the societies which produced these youngsters that is really important. How will these societies respond to force when under attack? Are they as vulnerable to applications of military power as their predecessors? If not, must we change our notion of what is included under military capabilities? Must we rethink the nature of force, its components, and methods of application? Must we redefine objectives and learn to attack them from new directions, in new ways, and on a new scale? And, in support of these revisions, must we invent new weapons, new techniques, and new procedures?

The questions need exploring. On the evidence of it, the importance of military power has diminished as a means for influencing events wherever the revolutions in the distribution of population, in the dependence on technologies, and in political consciousness have taken hold. The one niche where military power still occupies a position of supremacy, its utility only barely challenged, is national security—the specialized mission of developing and deploying armaments in ways that will deter a similarly endowed potential enemy from unleashing his arsenal. But power assembled for this mission has not added strength to the pursuit of goals and objectives unrelated to the prevention of nuclear war. It has not stopped nations from claiming international waters, from expropriating foreign-owned properties, from seizing ships, from sheltering air pirates and international terrorists, or from trafficking in heroin. In consequence, major powers have found it necessary to miniaturize external goals and objectives, attributing the scaling down to a declining interest in foreign affairs rather than to the shrinking capability for making their influence felt. The retrenchment is risky. To acquiesce to the cumulative violation of lesser interests can prove just as dangerous over an extended period as the surrender of a vital interest.

Engels once noted that "the military leader's most important task is the need to adjust the methods of warfare to existing conditions."[1] But the concerns which yielded today's elaborate weapons technologies have left the military little time for heeding his advice. The present equation includes terrain, climate, and technology but not societal change. Neither the dominant strategic schools nor the armed services appear to take into account that cultures which had been rural are now urban; that life support systems which had been simple, natural, and self-reliant are now complex, synthetic, and interdependent; and that populations which had been docile, apathetic, and eager to blend into the mainstream are now active, aware, and conscious of their identity.

"...THE MILITARY LEADER'S MOST IMPORTANT TASK IS THE NEED TO ADJUST THE METHODS OF WARFARE TO EXISTING CONDITIONS...."
Engels

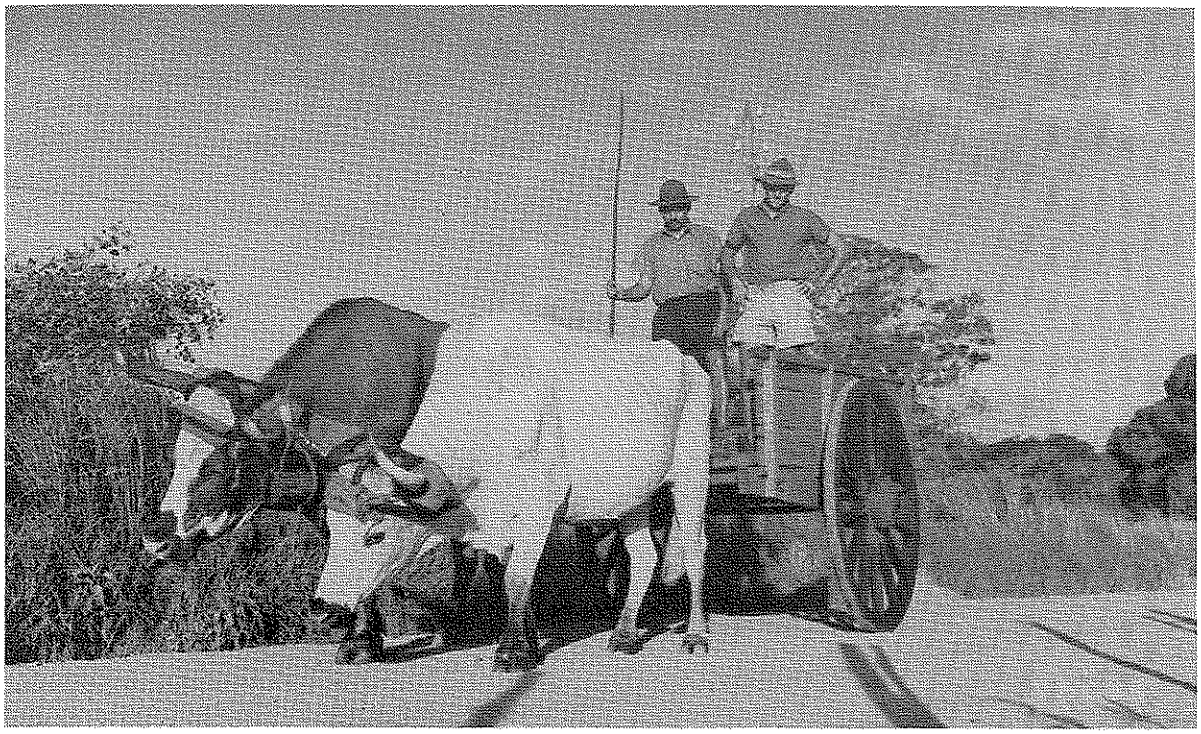
The omission may explain why military power below the nuclear level has declined in utility. It is arrayed against societies which no longer exist; whereas the societies which have come into being remain relatively immune to traditional power concepts so long as their unique characteristics and vulnerabilities go unrecognized and unexploited. The operating assumptions, in other words, have lost touch with the operating environment; the tools no longer fit the job.

The purpose of this paper is to focus briefly on "existing conditions" in order to find solutions to the dilemma which confronts us. The first part provides an overview of the two principal characteristics of the new societies—the *interdependence* resulting from specialization and the *new vulnerabilities* associated with huge cities, complex technologies, and politicized citizenries. The second part contains a broad range of suggestions for militarily exploiting the opportunities offered by societal change.

PART I - INTERDEPENDENCE AND NEW VULNERABILITIES

THE CONCEPT OF INTERDEPENDENCE

Cities may be exciting, glamorous, and rich



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Farming yesterday and today.

in opportunities for upward mobility; yet, their attractiveness exacts a price. Each new inhabitant adds to the support burden placed on an agriculture already transformed to an unprecedented degree by the pressure to provide ever more surplus food. The small, self-contained farms which yielded a bare surplus over and above the needs of the subsistence tenant are almost all gone. In their place, large holdings bring industrial techniques to cultivation by concentrating on but one specialized commodity.

"IT WILL TAKE AT LEAST 30 MORE YEARS BEFORE CITY DWELLERS OUTNUMBER VILLAGERS FOR THE FIRST TIME IN HISTORY...."

A new dimension in interrelationships appears with the emergence of the factory farms. Traditionally, the city could not exist without agriculture, though its appetite had never been so voracious. The farm sector, for its part, was quite able to survive without reference to the city. But this independence has been lost. The choice of production methods firmly attaches agriculture to the urban, industrial region for machinery, parts, chemical fertilizers, and pesticides. A vast infrastructure of roads, factories, power grids, dams, warehouses, and distribution centers joins city and countryside and amalgamates the two into a gigantic machine with interacting components.

Ultimately, all citizens become dependent for their sustenance on processes which are beyond their control. Even the farmer has been swept up in this trend. As the producer of but one specialized commodity–beef cattle, poultry, corn, or vegetables–he, like the city dweller, must purchase food in a store and entrust his well-being to the price structure, processing and distribution systems, and other vagaries of a consumer economy.

The new ties are by no means confined to domestic linkages or agricultural products. Entire nations can develop dependencies and interdependencies through their need for raw materials, energy supplies, manufactured goods, technologies, skills, or export earnings. Not all partners are equally involved. For some, participation in the network advances relatively minor interests–the accumulation of convertible currencies or creation of domestic farm jobs; but for others, the partnership represents a vital interest–access to food or a basic raw material, continued economic prosperity, and hope for growth.

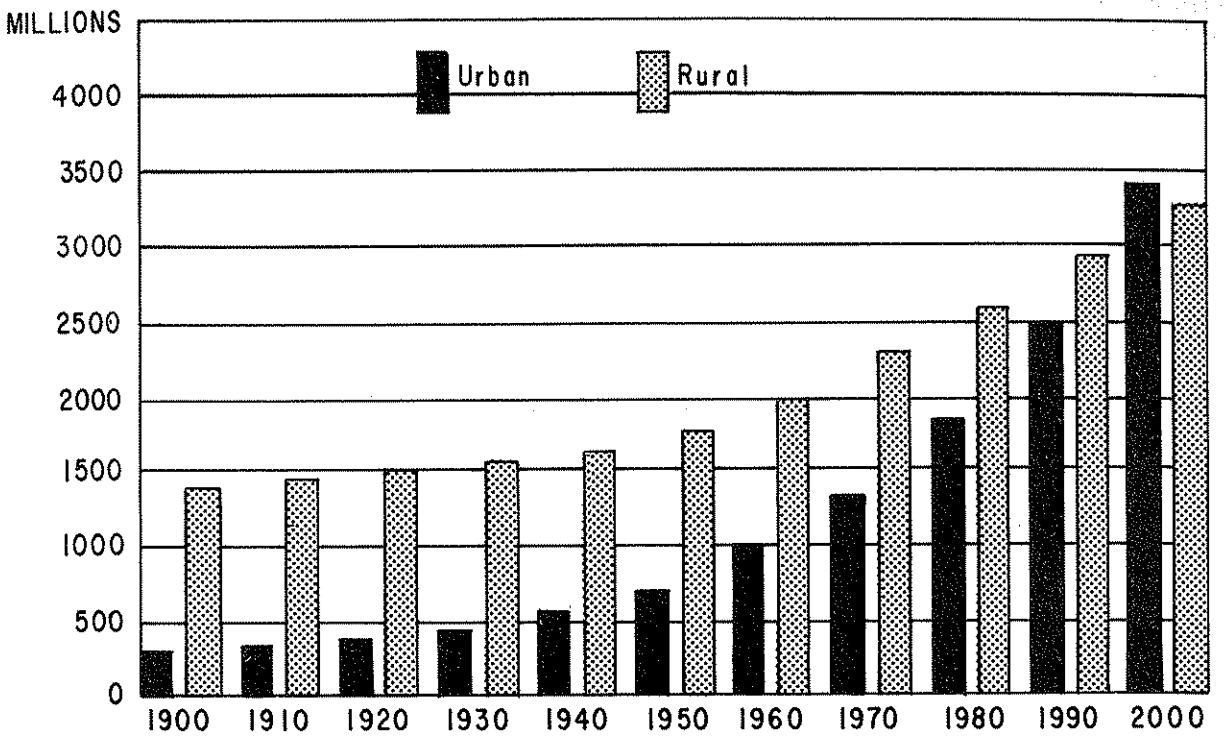
INTERDEPENDENT AND SELF-RELIANT SOCIETIES CONTRASTED

It will take at least 30 more years before city dwellers outnumber villagers for the first time in history.[2] But the trends which produce interdependent societies move faster than that, outracing the population shifts. In this sense, a nation can become interdependent long before the demographers certify it as urbanized. The status comes when two criteria are met: *people, whether they live in cities or villages, must share the same dependencies, like the need to purchase their food; and activities, both on the farm and in factories, must become specialized tasks which contribute to the operation of a larger process.* Strategically, the concept of interdependence is all-important. When a nation reaches this development, its vulnerabilities multiply. It can be struck any place, anywhere, with reasonable expectations that major disruptions will follow.

In the developmental stage which precedes interdependence, nations are self-reliant. The self-reliant society operates without linkages and interdependencies. The inhabitants attend to their own basic needs–they grow their own food and fiber–with a minimum of support from other sectors, elements or individuals.

"... ACTIVITIES, BOTH ON THE FARM AND IN FACTORIES, MUST BECOME SPECIALIZED TASKS WHICH CONTRIBUTE TO THE OPERATION OF A LARGER PROCESS."

WORLD URBAN* AND RURAL POPULATION



*Urban refers to towns of more than 20,000 people

Source: United Nations Data

While interdependent societies can be, demographically speaking, either urban or rural, the self-reliant society must be rural—and *primitive rural,* at that.

Today, no nation is entirely self-reliant. Even the more backward of the developing countries have evolved major interdependent components. The large cities in Africa, for example, require extensive ties to the outside world for survival; but their intercourse with the hinterland, just beyond the suburbs, is almost nonexistent.

Societal change may have blurred the distinction between rural and urban. But strategists hold to these concepts in their strict demographic meaning and value them at the expense of the more utilitarian categorizations of interdependent and self-reliant which have yet to enter their vocabulary. The error carries over into assumptions about the use of force. Rural societies are regarded as the dominant form of social organization (which they are, population-wise), but the characteristic attributed to them is the vanishing concept of self-reliance. In consequence, strategists see much of society as it once was but no longer is—as a homogeneous aggregation of small, closed systems. Each of its minuscule components is a microcosm that embodies all the attributes of the whole. Removing a part—any part—will diminish the whole quantitatively but leave no qualitative impact on the remainder. Control is obtained through education. The attacker must chip and whittle away until he attains a thinness that can be easily snapped; alternatively, he may split the society, like a log, and then split it again, until the chunks are of digestible size. There is a direct relationship between the amount of force applied and the effect obtained. Hence, the attacker must search for sophisticated means that multiply his muscle power and endow his efforts with an overwhelming mechanical advantage.

The strategies aimed against the rural

society embody clean, sequential approaches. The means for conducting the war are held to be well-disciplined, hard-hitting, identifiable and quantifiable military forces. Objectives are selected for their structural nonconformity with the otherwise homogeneous composition of the enemy society. They are the thin spots or weak points that, if struck, will cause the opposing whole to fragment into smaller pieces. Clausewitz called these spots "centers of gravity"[3] and suggested that they include seizure of the enemy's capital, defeat of his strongest general, or rupture of the weakest link in his alliances. If the plans succeeded, the outcome could not be in doubt: surrender of the enemy and attainment of the victor's objective.

The emerging, interdependent society is woven from an entirely different material and vulnerable to entirely different types and applications of pressure.

Most important, the modern society—whether rural or urban—is a system. It is an aggregate of individually distinct components which contribute a specialized function to the operation of the whole. Concepts of waste and inefficiency reinforce the trend to specialization by purging components which duplicate tasks already being performed. No part can exist in isolation and the whole cannot survive the removal of a major part. Control is achieved by one of two methods. One can take advantage of the system's internal circulation by injecting irritants of a desired intensity which the system itself will distribute. Or one can disrupt the system by damaging a principal operating element. In neither case is there a direct relationship between the amount of force applied and the results obtained. It takes but a mild amount of starter force to set in motion a train of repercussions that gains in impact as it spreads through the system.

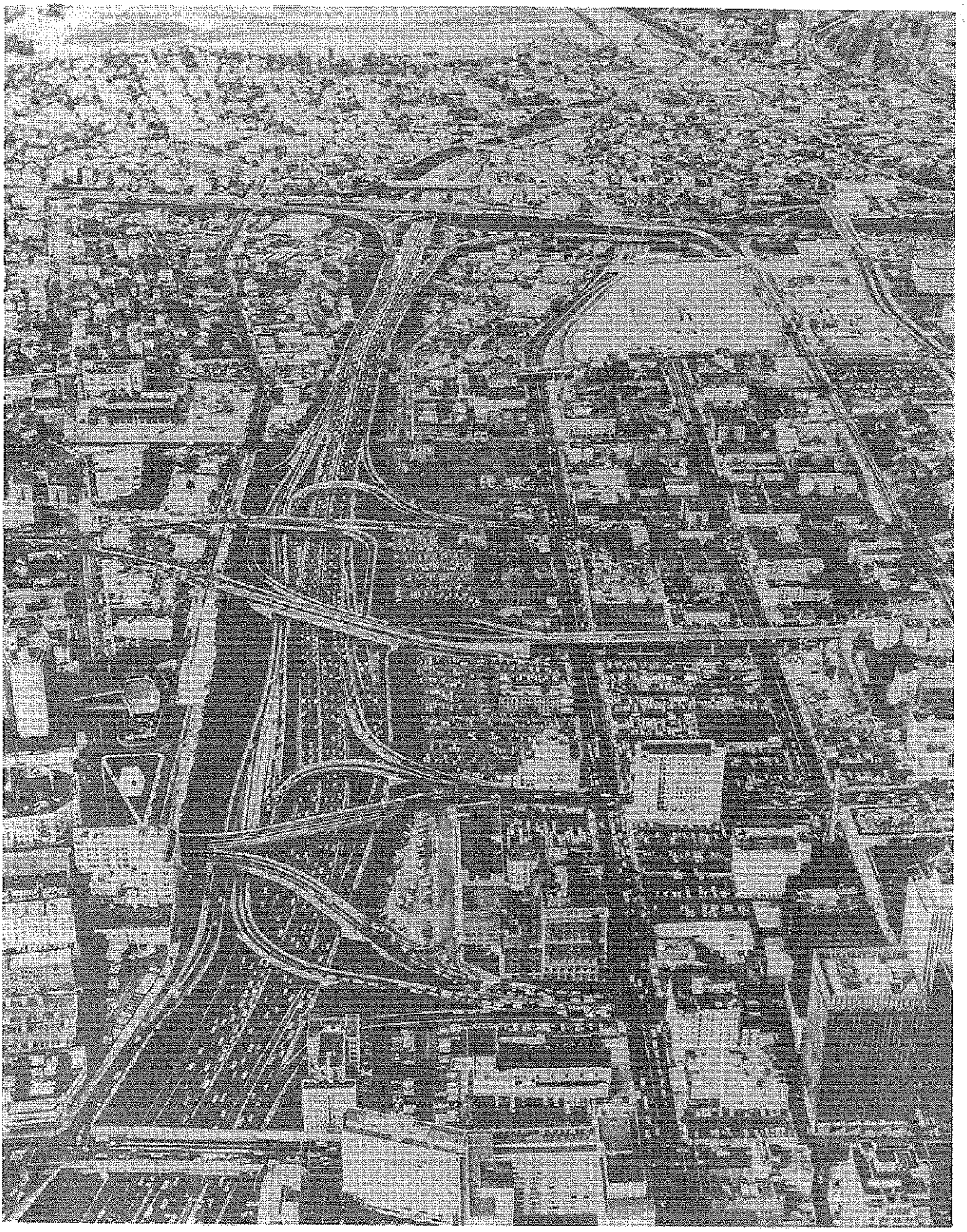
The interdependent society challenges the strategist to invent new concepts of force and new objectives, for the society is too resilient to respond to techniques that proved effective against the self-reliant, rural structure.

The principal new strategic opportunity stems from the vast networks which draw together a variety of components—labor, agriculture, transportation, manufacturing, prices, raw materials, the public welfare—each influencing and influenced by all others. In one way, the linkages become a rival to military power by offering a range of paths over which influence can be conveyed without resort to force. Tactics that include an incitement to strike, an assault on a currency, or a ban on vital shipments for ecological reasons can now be employed with devastating effects. In another way, the networks multiply the opportunities for applying military force by presenting planners with an infinite choice of locations for cutting, snipping, and disrupting the frail linkages. In still a third way, two nations may be in conflict, each freely using the newly available, nonviolent channels to erode the opponent's power; at the same time, they may profess to be staunch military allies, willing to join forces in the common defense.

The dual channel for applying force is but one of many novel strategic techniques which can be designed to exploit the characteristics of an interdependent society. Here are others:

— Most present strategies are based on the escalation of force—giving the screws another turn, so to speak. Now it becomes possible to employ a strategy of escalating effects, while holding force at a constant level. An opponent may be infected with a light fever, a serious disease, or a fatal ailment, the gravity of the effect more dependent on the location of the injection than the quantity of irritants. Likewise, for the same expenditure of effort, an attacker can either divert an enemy society from operating at peak efficiency; unbalance the workings of a major component to divert priorities from external affairs to internal repairs; or, in the worst case, bring the operations of the attacked society to a halt altogether.

— New objectives have come into being that did not exist when the current assumptions about the use of military power were formed. The agricultural component of the more advanced nations is a case in point. Control of the 5 percent of the population employed in food growing offers the attacker



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Large cities have become captives of their size.

a major advantage—a leverage for imposing his will on the remaining 95 percent of population, productivity, and wealth.

– New options in controlling terrain become available. Domination of any geographic part of a self-reliant society required physical seizure and occupation of the desired space. The characteristics of the interdependent society, on the other hand, permit control of its land area by disruption. Not one soldier needs to cross into its terrain.

– Pressure against a self-reliant society had to be applied directly to the objective. The option remains feasible for the interdependent society; but better yet, pressure can be transmitted through intermediary stages which, as a bonus effect, amplify it in transit.

– An effective foray against a self-reliant society required weapons superior to those possessed by the defender. But the weapons used against an interdependent society need not outperform the opponent's capabilities. In most cases, they can be of simple design, devoid of brilliant technological flourishes. The one specification which they must meet is the ability to disrupt. The complexities and interrelationships of the enemy's system can be counted on to do the rest.

The new strategies are not without pitfalls. The interdependent society is difficult to isolate. Visible and not so visible linkages tie it to other nations. For example:

– On occasion it will be difficult to ascertain the enemy society's linkages in advance. Ties are easily spun today. Some, like agreements, trade, developmental assistance, and common approaches to transnational problems, function in the public view; but others, like the activities of multinational corporations, international insurers and reinsurers, the manipulations of currencies, and the movement of funds, may be concealed deliberately. A disruption, seemingly limited to the confines of the enemy nation, may touch upon the hidden linkages and launch unexpected reactions that are felt in other nations and cause them to become involved in the dispute.

– In extreme cases, linkages may be so complex and devious, moving alternately along physical, economic, political, social and psychological channels, that an attacker, not having studied them carefully, may set off a reaction that is ultimately deposited on his own doorstep.

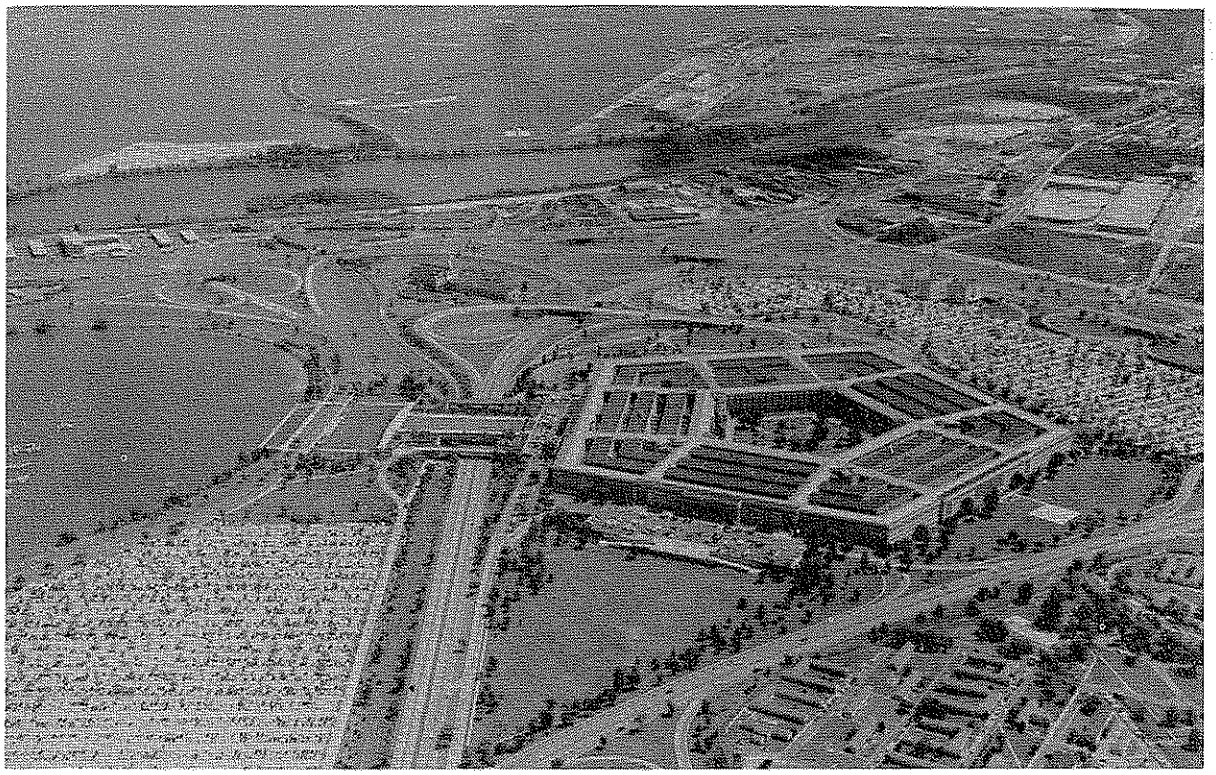
– The ready availability of international linkages may encourage a hard-pressed nation to prolong a war, while widening participation. In what might be called a "kidney-machine" strategy, a severely disrupted society can extend its ability to resist by linking its least damaged elements to a resource base located in an allied nation and receiving resupplies by air or sea. Even if the countryside has fallen, the capital city can be kept alive and continue the struggle by means of this strategy. Only small nations can benefit from this strategy, of course. Maintaining part of a larger nation would exceed the export capabilities of even the most powerful ally.

NEW VULNERABILITIES

Traditionally, military power competed against military power. Success was achieved by the side which gained a lead in strength, punch, technology, mobility, morale, organization, and operating efficiency. A departure from this classic perception may now be in order. By altering the physical environment and changing his social organizations, man is exposing himself to a multitude of hitherto unknown risks and dangers—so many, in fact, that military planning cannot ignore the trend. Instead of improving capabilities in relation to those possessed by the enemy, it may be more profitable today to concentrate on the design of instruments which specifically exploit the new weaknesses; to shift emphasis, so to speak, from overpowering the sentries at the guarded gate to securing entry through the gates left unwatched.

CITIES: THE VULNERABILITY OF SIZE

Traditionally, urban populations under military attack would flee to the surrounding villages; or, when food became scarce, city dwellers with knapsacks would visit nearby



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A view of the Pentagon on a typical work day.

farms and barter for eggs, bacon, and bags of flour.

These options are foreclosed for the metropolis. The inhabitants of the great conurbations—the Boswash, Chipitts, and San San[4] of Herman Kahn—cannot be evacuated, dispersed, or provisioned by foraging. The sheer weight of numbers—20, 40, or even 60 million— would crush the rural sector, if one still existed.

The big cities have become captives of their size.[5] For better or worse, the population must remain in place, risking its sustenance and support on thin, fragile systems that have been engineered without alternatives. New York City consumes 16,000 tons of food each day. Seven days of back-up are stored in city warehouses—much of it perishable. Disruption of electric power and a halt in resupply would quickly plunge the city into chaos.

A precarious food supply is but one vulnerability of today's metropolis. Transportation is another. Most great cities had their beginnings on small, sheltered sites that balanced a commercial advantage with security from assault. Today, the limited access routes that aided in protection have become choke points impeding the movement between suburbs and downtown. Millions of workers must reach their place of work by crossing bridges and causeways or by driving through tunnels and along narrow passages. These artificial structures operate at maximum capacity. If one structure is disrupted, the others cannot accept the overflow. As new ones are built, they become jammed almost immediately. If walking had ever been an alternative, it no longer is. Workers on foot could never cover the 600,000 passenger miles which it takes to fill and empty the Pentagon each day.

Besides monumental traffic jams, size makes cities prone to breakdowns in communications; power shortages and failures; uncollected garbage; flash floods; overflowing sewers; risks of epidemics; rising

crime and vandalism; contaminated air, water, and food; heat pools that affect the climate adversely; unacceptable noise levels; crowded dwellings, slums and shantytowns; bureaucratic ineptitude; public employee strikes; and overlapping and conflicting jurisdictions.

These forces combine to keep the modern metropolis on a constant crisis course. New York City, a bellwether conurbation, has seen its drawbridges left open by striking operators; its milkmen and teamsters walk off the job; the garbage pile up in the streets; law enforcement slowed down by disgruntled police officers; TV transmissions blacked out by a malfunction in the Empire State Building antennas; subways and mid-Manhattan flooded by bursting waterpipes; and public transport, elevators, and heating and air conditioning units stop operations when a temperamental generator failed repeatedly to produce its programed power.

The modern city teeters on the brink of disaster. No nuclear bomb is needed to hurl it into the abyss of chaos. A slight nudge will do the job. If strategists establish the goal, technology and imagination should find the methods that will intensify the built-in crises of the city; that will probe the vulnerabilities a mere pin prick deeper than accidents or the acts of dissatisfied municipal workers. There must be options that allow pressure to be applied to one point or in concert; that permit tightening a hold gradually or suddenly. Such approaches, carried to the end, will make the city uninhabitable or ungovernable. Its vital role in transmitting control, direction, information, and products is disrupted. Other societal stages, deprived of their input, become disjointed and disoriented. They, too, may cease to operate.[6]

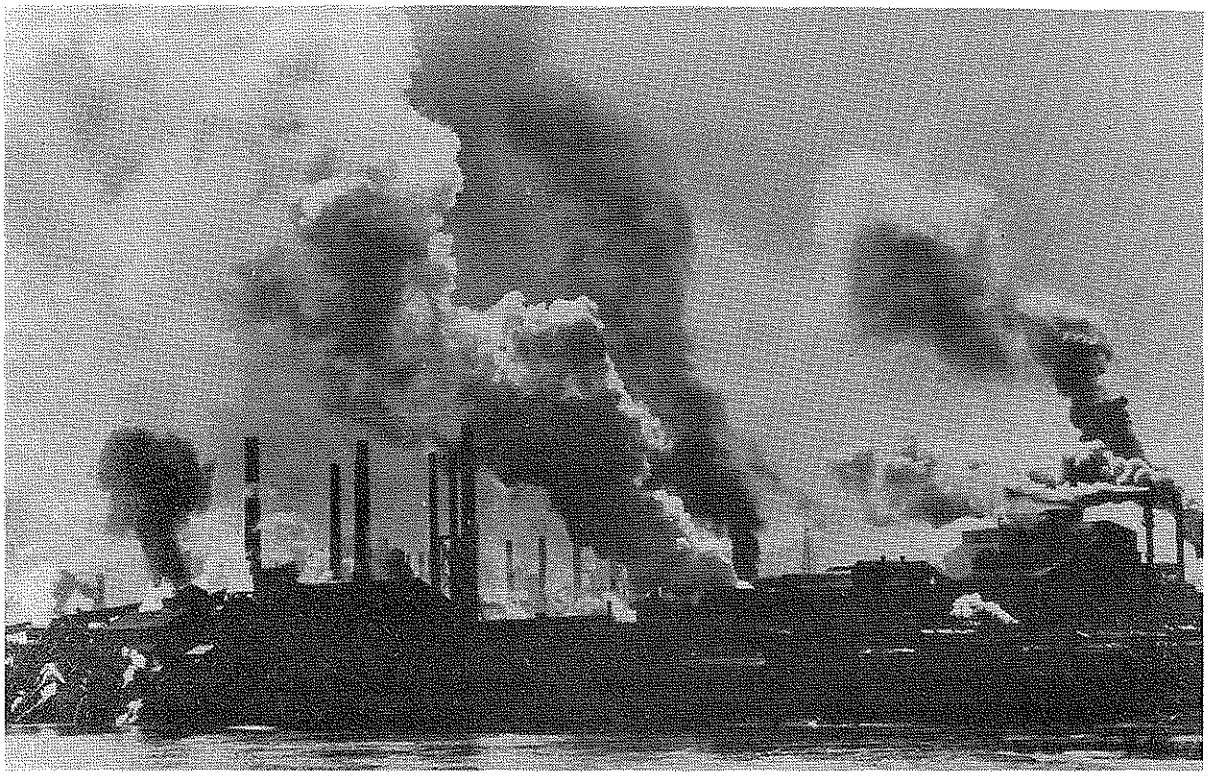
MODERN AGRICULTURE: THE VULNERABILITY OF A FRAIL ECONOMY

Under the pressure of having to feed one billion more people in the coming decade, the shift to new cultivation techniques is sure to pick up speed. Any prospect of large gains entails the taking of greater risks—and agriculture is not exempted from this rule. In seeking higher yields from new seeds, chemical aids, larger holdings, commodity concentration, and giant irrigation projects, food growing becomes exposed to a proliferation of natural and man-made hazards.

— Plants grown from *new seeds* double or even triple customary yields of wheat, maize, and rice. Vast areas of the developing world have been planted with new seeds—40 million acres in Asia alone—and just in time. The major famines once predicted for the seventies have yet to occur. But not much is known about the disease resistance of the new seeds. Normal experimentation periods had to be telescoped to ward off massive hunger. Now scientists fear that the narrow genetic base of the new strains increases their vulnerability to disease organisms; and that still unknown pathogens may be mutating into forms that can capitalize on the plant's limited defenses.

— The use of *chemical fertilizers* has increased ten-fold since World War II. The bulk of the larger consumption has occurred in the developed agricultures; but the developing world, too, is becoming a heavy user to maximize the potential of new seed varieties. Nitrogen, phosphorus, and potassium are the primary nutrients that plants must take from the soil. Few nations are self-sufficient in all three ingredients; most must import one or more. As a result, major suppliers assume an ever-greater power over customer nations which base their harvest goals on the uninterrupted flow of soil-enriching chemicals. For the longer range, an even more critical factor appears. While needs go up, fertilizer supplies are becoming scarce. Nitrogen may be plentiful in the air, but its synthesization requires prodigious amounts of natural gas or the lighter fractions of petroleum. Phosphorus and potassium, in the meantime, are approaching exhaustion. Unless new deposits are discovered or recycling is perfected, known stocks are not expected to last for more than 30 years.

— *Large holdings* enhance opportunities for mechanization; they also facilitate the spread of infectious diseases. Bacteria that



ENVIRONMENTAL PROTECTION AGENCY

were held to a small area by yesterday's checkerboard farm now find few obstacles to block their movement from plant to like plant and animal to animal. Great Britain had to destroy 400,000 head of infected cattle in 1967; 3 years later, the United States lost almost 500 million bushels of feed corn to a devastating blight. The threat is more than national, however. The same hybrids and crossbreed varieties are beginning to dominate the world's agriculture and impose genetic uniformity on plants in nations as widely separated as the United States and Pakistan. In this environment, one pathogen can destroy the food crops of several nations at once. More disturbing, the removal of natural barriers to the spread of disease may inspire unprincipled nations to reexamine the utility of biological weapons. However, there is a safeguard. Any nation which contemplates biological warfare must take care that the target crop bears no genetic relationship to its own; otherwise, the attack becomes a form of suicide.

Another risk is the trend to *concentrate a vital commodity* in the geographic region where soil and weather are most hospitable to the crop. Had the practice been common in the early 19th century, Clausewitz might have cited it as a strategic center of gravity; for that is what the 15,000 or 20,000 square miles become when a nation of one million square miles sets them aside for growing a staple. Seizure, neutralization, or disruption of this relatively small land area—already exposed to the vulnerabilities of new seeds and larger holdings—can quite possibly bring the entire nation to its knees.

— One of the great recent priorities of agriculture is to bring more land under *irrigation.* Eight of the world's 10 largest dams and eight of the 10 greatest manmade lakes have come into existence in the past 10 years.[7] Still bigger projects are under construction or in the planning stage. Dams are risky. Rupturing even a small earthwork can lead to catastrophic consequences. Should an accident befall Kariba, Bratsk, Owen Falls or High Aswan, at least 20,000 square miles of the most productive land, often heavily

populated, would be buried under 10 feet of raging water.

The success of the new agriculture hinges on still more factors: labor saving devices, pesticides, storage, reliable transportation, a reasonably healthy economic climate, and the means for making foreign purchases.

How can a determined nation exploit the emerging vulnerabilities in growing food? There are a thousand ways, covering the spectrum from indirect to direct approaches, from economic to physical means, and from mild to brutal effects. Fertilizer sales can be slowed, reduced, or disrupted; they can be stalled in negotiation, through expropriation, or by environmental smokescreens. Economic shock waves can interfere with price structures, alter consumer preferences and demands, reduce foreign exchange reserves, or destroy credit. Surpluses can be withheld from buyers. Biological agents can take their toll of the new seeds; the larger holdings will spread the infection. Weather modification can damage crops. Giant dams can be ruptured. If crops still survive, they can be infected in their storage sites; alternatively, transportation strikes can halt their delivery. Mankind has come a long way from the checkerboard farms which could be controlled in but three ways: by foreclosure; by killing the farmer; or by occupying the land.

THE SYNTHETIC ENVIRONMENT: THE VULNERABILITY OF TECHNOLOGY

The great technologies in energy generation, computational abilities, and communications have taken command. They are strategic in the strictest definition of the term; for man has left himself with no alternatives. Should the great synthetic structures be disrupted, the society must collapse; for the energy requirements cannot be made up by man's muscles; the complexity of processes cannot be solved through abacus mathematics; and the control and coordination networks cannot be duplicated by human contact.

The synthetic environment shares the characteristic of the interdependent society.

"THE GREAT TECHNOLOGIES IN ENERGY GENERATION, COMPUTATIONAL ABILITIES, AND COMMUNICATIONS HAVE TAKEN COMMAND."

None of its components can function separately. The linkages draw together physical, social, economic and political systems, and they criss-cross national boundaries.

Fragility increases as sophistication advances. The more complex the structure, the more vulnerable it becomes. "Charley's system is like an IBM machine," extremist Robert A. Williams once noted. "Put something in the wrong place and it is finished for a long time."[8] For example:

– All of aerial transportation, with its costly planes, gigantic hangars, mile-long terminals, huge fields, electronic navigation devices, and worldwide flight controls, is vulnerable to one passenger claiming to carry a dynamite stick in his briefcase.

– Striking coal miners in Great Britain, representing less than 2 percent of the total work force, bring the nation's economy to a halt.

– A circuit breaker in the United States, activated by machine error, plunges 50 million people into darkness.

– Two revolutionary lunatics in Chicago threaten to poison the city's inhabitants by emptying cultures of deadly bacteria into the main water filtration plant.[9]

Man's commitment to synthetic environments is accelerating. The best indicator–the production of electric energy–is increasing eight times as rapidly as population.[10] Most of the change has occurred since World War II; hence, little is known about how synthetic environments are affected by armed violence.

One can conjecture, though, that a synthetic environment becomes a handicap in any conflict with a primitive opponent. More is risked than can be won. The technical structures are easily damaged by means that

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The vulnerability of technology.

the backward enemy possesses. He, on the other hand, is relatively secure against retaliation. He owns little of value. The many small, closed systems of his civilization—houses with their own well, cesspool, and dung-burning stoves—must be taken out one at a time, an operation for which the sophisticated opponent may lack the stamina, heart, and weaponry.

In a conflict with an equally industrialized opponent, utilizing conventional means of war, the possession of complex systems is neither advantage nor disadvantage. However, the side that is first in developing a thorough understanding of linkages and processes and learning where the Achilles heels are gains a devastating edge that, in the long run, can prove more significant and decisive than an outright superiority in weapons. The exact pressure, applied to the right location, can set in motion a fearful damage train that multiplies its harmful effects as it thunders through the system's many interchanges.

POLITICAL CONSCIOUSNESS: THE VULNERABILITY OF THE PEOPLE

The third major ongoing revolution is the rise of political consciousness. Cities are the pressure cookers that politicize their inhabitants. The restraints of the traditional village culture which allocate each member his place, and hold him to it, will not long survive the raucous tempo of the city. Schooling, communication, changing work patterns, a cash economy, new horizons disclosed through observing different life styles, the tingle of expectations, and the taste of opportunities quickly obliterate behavior patterns that were centuries in the making.

Once politicized, large segments of the urban and rural sectors launch themselves into a contest for a share of power. They challenge and second-guess decisionmaking. They demand a greater voice on all matters that may affect their welfare. They keep a jealous eye on factions that may have won a better

deal than themselves. Inequalities, real or perceived, in access to jobs, housing, and education widen cleavages between groups and strengthen tribal bonds. There is a distrust of institutions and authority. Talk of exploitation and domestic colonialism enter the every-day vocabulary. Statistics, sociological jargon, Marx, and Mao provide theories that explain the struggle and guide its outcome. The ideas of compromise, practicable when power is negotiated by elites, is not understood once participation widens. An all-or-nothing attitude prevails that often leads to do-it-yourself measures. In the resulting noise, clamor, and excitement, the broad societal goals and objectives become permanently lost to view.

In the great cities of the Western world, politicization runs in many rivulets. Factionalism and divisiveness, rather than common action, become the rule. When citizens do unite it is under the one feature that separates them from the majority, even though, other than for that feature, they are as indistinguishable from the main stream as peas in a pod. Sex, race, color, nationality, age, income, occupation, and even sexual preference have become the rallying banners for pressing vociferous demands; while citizenship, heritage, common liberties, and national interests have lost all value as solidifying sentiments. The emphasis on differences has spread to politics. Even the most hardened revolutionaries—the SDS, Black Panthers, the Palestinian Liberation Front, and the IRA—have splintered into factions that would rather turn their guns on one another than on society.

To stave off pressure, governments tend to channel resources into programs that will temporarily soothe the most troublesome elements. But as often as not, a decision motivated by appeasement will cause unsuspected resentment or waken appetites in groups that hitherto have kept silent.

In consequence, governments have become

US ARMY

Demonstrators shown attempting to stop a train loaded with Vietnam bound troops in August 1965.

preoccupied with internal issues. Even the defense of a genuine interest may collapse for lack of citizen support. It may be viewed as a governmental ruse to delay domestic programs.

The citizen is impatient for action. He wants solutions *now* for problems which he defines in simplistic catchword terms; and any solution is guaranteed to stir the resentment of other groups. If, in this atmosphere, governments retain a modicum of surplus energy for the pursuit of foreign interests, an alert aggressor can quickly reheat the domestic scene. The great urban complexes are riddled with faults; and for each fault there is a pitchman who will not let anybody forget that it exists. Skillful irritation is guaranteed to aggravate any blemish into a painful sore; and, with any luck, a well-struck blow may shatter the entire framework.

In the developing world, the worst in urbanization—and its politicizing effects—is yet to come. Hundreds of millions of people are poised for the leap from village to city. A variety of reasons prompts the move: rural overpopulation; mechanization; the very fact that roads have been built and now lead to the city; transistor radios that sing of the good urban life; the hope of better schooling and jobs; droughts in Brazil; wars in Indochina; terrorism and tribal strife in Africa.

The outlook for the migrants is dim. Most will become what Robert McNamara once called "marginal men"—human flotsam displaced from the farm but not integrated into the industrial society. Jobs are scarce. In some cities, one worker out of two is unemployed. Even if capital could be found to create employment, few migrants would qualify. A lack of skills and schooling holds them back. Housing is no better. The marginal people move into shanties and shacktowns, the *favelas, bustees, tugurios,* and *bidonvilles* that spring up where space is available. Some fringe the cities. Still others jam against the commercial, communications, and transportation centers—the banks, government buildings, and railroad stations.

Keenly aware of their plight, closely packed together, with plenty of idle time on their hands, in the majority youthful, active-minded, and impressionable, and sorely tempted by modes of living that appear closed to them, the migrants form a disruptive, potentially explosive force. The mildest spark collects mobs that smash cars, burn buildings, and vent their fury on agents of the government, be they policemen, firemen, or ambulance drivers. In Calcutta, the trend-setting city of the developing world, violence and civil rage are no longer reported as news unless hundreds die in the fray.

With every year, the remaining restraints of the village antecedents grow weaker. And the first slum-born generation cannot help but add to the unrest as it displays in adulthood the personality disorders that inevitably follow the emotional and physical deprivation suffered during adolescence.

Why is political consciousness a vulnerability?

In traditional warfare, people are pawns. The enemy would be deprived of territory and population so as to reduce his recruiting base. A king with a lesser number of subjects could be defeated that much more easily. In modern war, commanders may have second thoughts about pursuing this strategy. The politicized masses would constitute a most difficult occupied populace. The principal result of an advancing frontline, under these circumstances, would be to put more enemy in one's rear.

The real importance of a politicized population is the influence it wields over its own government. We have seen that do-it-yourself approaches represent a threat to internal stability; that quarrels keep governments off balance; and that constant demands for mediation, conciliation, appeasement, and compromise reduce the attention span and means that can be devoted to external goals.

Because of these attributes, political masses deserve a degree of attention that goes beyond conventional concerns with "public opinion" and "propaganda." In a sense, their presence adds a new dimension to war—declared or otherwise—that transcends the concept of a duel, of two sets of soldiers firing bullets, shells, and missiles at each other

and military targets. The very fact that the masses have become politicized and fractionalized, hold strong but contradictory beliefs, and demand immediate, responsive governmental action on conflicting demands, elevates them to target status. Their mood influences what governments can, will, and won't do. Even the rulers of the Soviet Union must take a strong desire for consumer goods into account when they decide how much can be spent for guns and how much for butter.

The weapons used against politicized masses need not be those that pierce, fragment, shatter, detonate, explode, or burn—although they can be. They must be carefully chosen for the desired effect which is to activate the masses in directions that will divert their government from its course, undermine its resolve, and erode its resources.

Modern war has, indeed, become a people's war—not in the sense that all people will fight it, but that the war must be brought to all the people. In a change from the 19th century, it is not the kings who count; the mob has replaced them as a center of gravity.

PART II - SUGGESTIONS FOR THE MILITARY

REPAIRING THE MILITARY

The threat of nuclear annihilation casts a long shadow over modern society, no matter how or in what way it evolves. So long as any unfriendly power commands a major nuclear arsenal, the United States military must be in a position to counter that capability with an adequacy of power of its own.

But the military must be able to contribute, with equal reliability, to the state's other external goals: those that relate

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to the competition for diminishing resources, assist in the maintenance of the good life, and lay the foundations for an even better life for the next generation.

Here the military is found wanting. The widening gap between society, as the objective, and the military, as the tool, has deeply eroded the traditional goal-resource relationship. In all probability, the external objectives—whether statesmen conceive of them as ambitious or modest—may be free-floating altogether, cast adrift from their military moorings, supportable only to the extent that opponents and competitors retain a belief in military power in its present configuration. But the evidence is mounting that actual military support of an objective would not stand a test, if anybody were willing to let it come to that.

The most pressing problem today is one of military effectiveness, not budgets. A higher priority must be accorded to repairing the means for attaining external goals than to their downgrading, either by design or default. The size of the military—large or small—is irrelevant to this task. What is important is to restructure military power so that it can be brought to bear, full force, on "existing conditions."

BROADENING MILITARY ASSUMPTIONS

As a first step in the repair job, the military must review its strategies, doctrines, and even tactics, so as to make them take into account that the enemy society is urbanized; that it relies on synthetic environments for its support; and that its citizens are highly politicized.

The physical punishment which might have broken the now-gone self-reliant societies is readily absorbed by this new environment. Consider, for example, how many ways there

are to move goods from New York to Boston: a dozen airfields, at least that many major highways, several railroad lines, and coastal shipping lanes. If bombs interrupted one route, shipments would be quickly detoured to another. Flexibility does not make the interdependent society invincible, of course, only more difficult to vanquish. Its specialized structure leaves it highly vulnerable to violence—but violence of a different order, differently applied than current doctrines prescribe. If bombs cannot halt the shipments between New York and Boston, there are other ways to snarl the traffic. Perhaps electronic means can be designed to scramble computer-printed destination or priority codes.

". . . THE MILITARY MUST REVIEW ITS STRATEGIES, DOCTRINES, AND EVEN TACTICS, SO AS TO MAKE THEM TAKE INTO ACCOUNT THE ENEMY SOCIETY. . . ."

What principles and special considerations should underlie a strategic-doctrinal-tactical review?

– By its very nature, the interdependent society is more vulnerable to weakening—gradual bleeding, so to speak—in advance of a traditional war than during a war itself.

– A major power, even one that likes to speak of itself as a status quo nation, must learn to think offensively, not only in combat but also in securing and safeguarding external objectives.

– As societies become more sophisticated, their vulnerabilities increase. The proliferation in weaknesses outdistances any nation's ability to provide protection. Strategists and planners must allocate a major effort to weaknesses as a starting point in analysis. Although capabilities—what-he-can-do-to-us—remain important, their significance may be overshadowed by vulnerabilities—what-we-can-do-to-him.

– Planning efforts must include not only enemy military targets or targets that contribute directly to the military effort, but also targets which, when damaged or destroyed, will diminish the enemy's societal health.

– Concepts of force must be widened. Direct applications must be augmented with indirect approaches which may often prove more effective.

– We measure our power and that of other nations by the amount of physical *force* that can be expended. There should be a second measure of power, tabulating the *effects* that can be obtained, regardless of the force used.

– Douhet taught us that we can bypass the main force and strike the enemy's centers of morale and production. The interdependence of resource flows now enables us to bypass Douhet's targets and disrupt the resource flow at its source.

– We have learned to control land by occupation and destruction. We must now learn to control it by disruption.

– The nature of complex systems is such that the input is separated from the output by distance and time. For the one to become the other, it must pass through numerous intermediary stages and transformations. In the course of these movements it becomes easily possible to lose track of the causal agent and disassociate it from the ultimate effect. We must learn to take advantage of this phenomenon by striking a blow without being identified as the attacker. Such an approach may negate the protective values the enemy derives from his deterrent capability; for what use is deterrence when one doesn't know who is posing the threat?

Not only the structural attributes of the new societies but also their physical characteristics must be considered in the review.

– The open spaces which underlie the doctrines for ground operations are shrinking rapidly. Noncombatants, no matter where one turns, get in the way of combatants. The global population density will number 140 per square mile by the year 2000.[11]

– Cities, in growing together to form huge conurbations, have become vast obstacles to the free movement of armies. A great

envelopment, like that laid out in the Schlieffen Plan, would vainly search for an opening in the solid urban wall extending today through Belgium and Northern France.

– Should a conventional force succeed in taking a metropolis, the logistical requirements of caring for its inhabitants would exceed the resources of the victorious commander.

– The changing physical environment and shifts in demographics may be of great significance in altering traditional patterns of revolutionary war.

– The rural sector is becoming increasingly inhospitable to the support of insurgencies. First, the rural element is becoming a less potent factor in a nation's power structure as its share of total population steadily declines. Second, new cultivations and the roads that follow reduce the size and number of "inaccessible" strongholds. Many regions that adults remember as jungle from their geography lessons have been cleared and brought into production. Third, the growing infrastructure of roads and highways enhances a degree of mobility which helps the guerrilla hunter more than the guerrilla. Finally, the specialized commodity operations of today do not provide the insurgent with the full line of Quartermaster services that he could requisition from the traditional farm. He, like his hunter, must have a pipeline or perish.

– Will insurgencies move to the cities? At this time, the urban areas represent an unknown host climate. The trends in being would indicate that politicization is more likely to lead to an increase in special interest unrest, with ample manifestations of civil disobedience, riots, and disorders, than to a genuine revolutionary movement which can capture for one cause the wide array of conflictive dissatisfactions.

– Perhaps the next development in insurgency is the rise in multinational guerrillas and terrorists who probe weak points in technological civilizations for personal gain, to draw attention to a cause, to create an economic loss, or for any of a hundred reasons short of taking power. Violence of this type is in an upward trend, moving from assassination to the kidnapping of hostages to seizure of entire airplanes. The next plateau may be an attempt to control a larger system than a jetliner–perhaps an effort to hold a nuclear power plant or even an entire city for ransom.

"... FREE OPERATING CONCEPTS FROM SELF-IMPOSED CONSTRAINT THAT EQUATES POWER WITH MILITARY POWER AND FORCE WITH MILITARY FORCE."

EXPANDING MILITARY POWER

The second step in the repair job is to free operating concepts from the self-imposed constraint that equates power with military power and force with military force. Perhaps this is an expression of the American way: to simplify a problem so that its solution can be assigned to a specialist. More likely, though, it is a truth that has been preserved so long as to become a fallacy. The concepts were valid in a former world when nations were autonomous actors. If linkages and interdependencies existed, they were few in number and certainly not vital. Rulers had but two options at their command for settling a dispute: to negotiate or go to war. There were no other ways to influence an opponent. Clausewitz summed up the conditions prevailing in this simpler, self-reliant period by observing that war is but a continuation of political intercourse.[12] But would he have reached the same conclusion, had Prussia depended on Mid-East oil for its energy needs?

On the surface, it appears that our concept of power leaves room for means other than military. Any listing of the elements which lend a nation strength will cite such factors as economics, technology, education, population, and national will. But in the final analysis, only the military component is deemed capable of influencing an opponent. The other elements are consigned to supportive, logistical roles. Economic power,

AN UPDATE OF CLAUSEWITZ' FAMOUS DICTUM: "FORCE IS THE CONTINUATION OF POLITICAL INTERCOURSE BY OTHER MEANS. MILITARY POWER IS BUT ONE TYPE OF FORCE, CO-EQUAL TO AND FREQUENTLY INTERCHANGEABLE WITH THE OTHERS."

in this arrangement, means that the nation can afford to pay for a large military establishment. Technological power guarantees that the military hardware is abreast of the outer limits of the state of the art. Education insures a steady supply of technically trained people for manning laboratories and weapons systems. Population stands for an ample recruiting base. And national will means that the citizenry will not lose heart when the first casualties and rationing occur. But it is the military—and only the military—who assemble the power components into a force package and deliver it to the other side.

However, we have seen that the many linkages of the interdependent society become a rival to military force by providing alternative routes for projecting power. In many instances, it is entirely possible to use either physical or nonphysical means to achieve the same objective. Take your choice. Consider, for example, the many ways by which one can stop the movement of oil or fertilizer or pig iron from Nation A to Nation B. They range from shipping shortages, to ecological restrictions on the use of a strait,[13] to insurance problems, to dock strikes, and to currency problems which complicate payments. One can also sink the ship or blockade the ports. Thus, military power has lost its monopoly as an instrument for gaining one's will; it has been joined by other methods, equally effective and decisive, though perhaps not as swift in execution.

If Clausewitz were still alive, he might have updated his famous dictum as follows: *"Force is the continuation of political intercourse by other means. Military power is but one type of force, co-equal to and frequently interchangeable with the others."*

The concepts of force and the nature of targets are constantly evolving. Once focused on the enemy's armies, war has been expanded to include lines of communication, centers of production, and sources of raw materials. Now may be the time to broaden the means and include under the control of national security managers all nonphysical types of force that we are capable of projecting.

Why national security managers? There is no alternative. Force is indivisible, no matter that governments tend to fragment its employment among various departments. In the absence of such an assignment, the formidable power inherent in the nonphysical means will remain untapped, uncoordinated, divided among many agencies, and in the custody of men who have not been taught to think in terms of vulnerabilities, disruption, and destruction.

Objectives which, like force itself, are indivisible would remain unattainable because we reach for them from too many directions, from too many perspectives, with not enough credibility, so that the efforts come to cross-purposes before the goal is reached. Great opportunities for securing a gain without bloodshed would be lost.

We must realize that military power is no longer the force of last resort, the means to be called forward when all others have failed. It is just one method for applying pressure, quick and visible, useful for some objectives, not so useful for others; and other methods are now available, but not fully understood or used. The National Security Managers should be given the capability to advise, in any situation, which method of force, military or otherwise, will best yield the desired results; to recommend when to blow up a currency and when to blow up a dam.

What is at stake, in redirecting and broadening the mission of the armed forces, is the future of the nation in an interdependent world. The steps must be taken if the United

States, once again, is to exert an influence on world events commensurate with its power and responsibilities.

NOTES

The essay is a think piece. The authors made no attempt to document every observation. In general, though, the information on population trends was drawn from *UN Yearbooks.* Our knowledge of agricultural developments is based on the most recent *FAO reports,* the *Pocket Data Books* issued by the United States Census Bureau, and statistical data released by the United States Department of Agriculture. The data on cities comes from a clipping file on urban problems.

SPECIFIC NOTES FOLLOW:

1. The Engels quote is found on page 192, *The Yugoslav Concept of General People's Defense,* Mdunarodna Politica, Belgrade, 1970.

2. When will city dwellers outnumber the rural population? "Growth of the World's Urban and Rural Population, 1920-2000," United Nations, New York, 1969, and the *Preceedings of the Joint Colloquium on International Environmental Science before the Committee on Commerce, US Senate, and the Committee on Science and Astronautics, House of Representatives 92d Congress* (May 25 and May 26, 1971) project this event shortly before the year 2000.

3. Karl von Clausewitz's *On War* has a fascinating section on "centers of gravity." (In our edition by the Combat Forces Press, Washington, D. C., n. d., the pertinent section begins on p. 585). A stimulating discussion topic is to discover centers of gravity in the modern context. Is a city's center of gravity the high ground overlooking it or the power plant? Is a nation's center of gravity its armed power or the strength of its currency? What was the center of gravity in the Vietnam War? Hanoi's discipline? The will of the United States people to continue the war? Try this mental game. It will force you to develop new perspectives.

4. Boswash, Chipitts, and San San are contractions of Boston-Washington, Chicago-Pittsburgh, and San Francisco-San Diego. They were invented by Herman Kahn in *The Year 2000,* New York: Macmillan Publishing Company, 1967.

5. Good examples of cities which have outgrown their original siting are New York City, Capetown, Genoa, and Lagos.

6. The Paddocks, in *Famine 1975; America's Decision: Who Will Survive,* Boston: Little Brown & Co., 1967—were the foremost doom apostles. But if their fears were exaggerated, they were not unfounded. Famines did occur this year in Bangladesh, Indonesia, the Philippines, and regions in Africa, and the Soviet Union needed a major assist, though not to avoid famine.

7. Data on dam construction comes from the *New York Times' Almanac.*

8. The Williams quote is from Robert E. Duggan's "Marxism and Contemporary Theories of Urban Guerrilla Warfare," *The Los Angeles Free Press,* February 5, 1971, pp. 6 and 17.

9. The examples used to illustrate the frailties of modern technology come from recent newspaper headlines.

10. One of the most comprehensive sources on energy data is "US Energy: A Summary Review," US Department of Interior, January 1972.

11. The global density assumed a population of 7 billion.

12. Our edition of Clausewitz phrases this famous quote as follows: "War is nothing but a continuation of political intercourse with an admixture of other means."

13. Since this essay was written, early in 1972, pollution has been cited as a major reason for controlling tanker movements through the straits of Hormuz and Malacca. ■