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NUCLEAR WEAPONS AND THE FUTURE OF REGIONAL CONFLICT IN THE MIDDLE EAST AND SOUTH ASIA

by

Martin van Creveld

Submitted to:

Office of Net Assessment
Under Sec of Defense for Policy
Pentagon
Washington, D.C.

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Executive Summary

This summary is structured in the form of answers to some of the questions addressed to me by Mr. Andrew Marshal during the first meeting--held on 18 April 1989--when this project was first discussed, viz:

1. Were President Sadat's calculations in limiting the October 1973 Arab-Israeli War affected by considerations pertaining to Israel's putative nuclear arsenal?

A positive, documentable, answer to this question is imposible to find. This is because no Egyptian government can admit having taken the nuclear factor into account without facing domestic pressure to build the bomb; or, if it did not surrender to this pressure, then the result would be would be tantamount to an admission that Israel (or the consequences of its "agression") are there to stay.

According to my findings, the Egyptians have confronted this problem from about 1969 on. Their solution consisted of sidestepping it by simply refusing to look nuclear facts in the face; under no circumstances will they admit the impact those facts have had either on the 1973 War or on the Camp David Peace Agreements that followed, least of all in front of domestic or Israeli audiences. Nevertheless, there exists plentiful circumstantical evidence that the Egyptian leadership has been as well aware as anyone of the Israeli nuclear potential since at least 1961, and has <u>always</u> taken this factor into account in <u>all</u> its calculations.

2. What are the effects of cultural differences? How do they affect the way various people in various countries perceive the bomb?

The answer to this question represents perhaps the most surprising finding of the present study. In over a year of research, I have failed to discover any important cultural influences on the way people in different countries see the bomb. Admittedly, here and there it is possible to find a somewhat quaint expression, such as Mao's famous "paper tigers" (later echoed by Syrian leaders); however, even these invariably date from the period before the countries in question aquired the bomb. For the rest, it would seem that nuclear weapons come close to fulfilling the old anthropologist's dream of discovering something all men have in common. As far as I could see the awesome power of nuclear weapons, the terrible nature of nuclear warfare (including also the danger of radioactive contamination), and the enormous potential for escalation are understood equally well everywhere. And this is even more true since the Chernobyl disaster than before.

Nor, on second thought, is this fact all that surprising. After all, the politico-military-scientific leaders of regional powers very often received their education and/or training in the Universities and/or military colleges of developed countries on both sides of the Iron Curtain. Moreover, they were latecomers to the field; for many years before they obtained the bomb, what nuclear facts of life they were acquainted with necessarily originated in the example set by the superpowers. As a result, they may actually be more rational in respect to them than statesmen in either West or East who, particularly during the early years, came forth with some strange ideas indeed.

3. How does the fact that many of the regional countries studied have never actually exploded a bomb affect their behavior and that of their neighbors?

As the cases of the Indo-Pak War (1965), the Arab Israel Wars (1967 and 1973), reported Soviet and Indian plans for a preventive strike against the nuclear installations of China and Pakistan respectively (1969, ca. 1977-84), and the Israeli strike at the Iraqi reactor (1981) demonstrate, nuclear ambiguity can be extremely dangerous. A country may feel that a nuclear neighbor will represent an intolerable threat to itself; conversely, the idea that the presence of nuclear weapons will lead to the freezing of interstate conflicts is widely shared everywhere. Either way, the result may be a preemptive coup of some sort. As best as I was able to make out, such considerations have led to major wars in the past, nor can there be any guarantee that this will not happen again in the future. Moreover, the possibility of a miscalculation--i.e that the suspect state should already possess the bomb at the time the preventive war against it is launched--cannot be excluded in principle.

On the other hand, the cases of China, Israel, India and Pakistan seem to incidcate that, once the existence of a bomb in the basement is admitted, its deterrent power is as great, or almost so, as that of a declared one. Pace concerned Western stragegists, this seems to be the case almost regardless of the nature of the delivery vehicles, command and control arrangements, and channels of mutual communication available--or not available--to the parties concerned.

4. What happens to a regional balance of power when nuclear weapons are introduced?

As the sorry state of the so-called "international arms trade" proves, as of the spring of 1991 the answer is: regional balances are slowly but steadily following in the wake of the situation that has long prevailed between the superpowers. In every case where nuclear weapons entered the picture, even in covert form, the outcome has been the disappearance of major interstate war in the regions concerned. Seen from that point of view the present study offers strong support to those who argue--Kenneth Waltz above all--that nuclear proliferation, so long as it is slow and controlled, is good for the world.

The demise of large scale interstate war, however, should not be equated with the disappearance of war as such. In many places low intensity conflict, in the form of guerrilla and terrorism by irregulars, represents a very credible alternative. Given that such warfare is quite capable of tearing entire societies apart, and that it can be carried out in the teeth of nuclear weapons, currently it represents the greatest single security challenge faced by some of the states in question. Either they succeed in putting an end to it, or else it will put an end to them.

Outline

Introduction: the Last Problem

Ours is a time of historical change. Forty-six years after the end of World War II, the international order which was created at Teheran and sealed at Yalta and Potsdam has finally come apart at the seams; simultaneously a new one, whose outlines are only just becoming visible, appears to be in the making. As Germany unites and Eastern Europe opens up, the Soviet Union--or what is left of it--seems to be withdrawing from its self-imposed historical mission of constituting "a Third Rome". As part of the process, it has begun to cut the size of its military forces, adopting a new "defensive" military doctrine and rendering the most important issues which have overshadowed strategic thought for decades irrelevant. This applies with particular force to worries concerning the "central balance" of power between the superpowers and the endless discussions, "real" and imaginary, of the wars that might break out between them; all of which are now as dead as the dodo.

The easing of West-East tensions in Europe and elsewhere does not in itself mean that war--even large scale war--may no longer break out in other parts of the globe. By one interpretation, the waning of bipolarity may even lead to an increase the number of such wars; nor is there a lack of dormant and not-so-dormant interstate conflicts which only wait for an opportunity to flare up. People have been thinking of actual or potential wars between Lybia and Chad, Ethiopia and Somalia, Hungary and Romania, Syria and Turkey, Turkey and Greece, to name but a few.(1) Still, the developments just outlined mean that large scale support for third world belligerents is no longer as readily available as it usually was during the bad days of the Cold War. Since the superpower dogs now appear less willing to allow their client tails to wag them against each other, most such conflicts no longer possess their former potential for intervention, expansion, and escalation. In most cases, should

the governments of some third rate military powers still choose to clobber each other, then strategically speaking there is not much reason for the rest of us to worry.

Though the present state of international relations may not be exactly idylic, at any rate the world's continued existence seems more secure now than it has for decades. The one exception to this rule, the one factor which may still bring about not just war but Armageddon, is the possession of weapons of mass destruction--in particular, nuclear weapons--by states whose conflicts have been left unresolved. For example, but for the presence in the region of nuclear weapons another war between India and Pakistan would be little more than a clash between two desperately poor local powers over some godforsaken border province that both claim belongs to them. The wars recently fought in the Gulf (1980-88 and 1991) have been much the largest since 1950; yet all they have proved is that, in the absence of nuclear weapons, there is no need for people in the First and Second worlds to lose their sleep. Put nuclear weapons into the hands of any of those countries, however, and things change dramatically. Under such circumstances, the prospect of another round of fighting in the region acquires fearsome, even apocalyptical, overtones.

Thus regarded, the effect of nuclear weapons on regional conflicts--the subject of the present monograph--does indeed appear as the last important problem still worth discussing by "strategic studies". Admittedly, a tactical nuclear device exploding, say, in the Mitlah Pass as part of an Israeli attempt to block an Egyptian march towards Tel Aviv might not automatically mean the end of the world. Still, even if it could be contained, it would mean the breaking of an important taboo and, therefore, an ominous step towards that goal. For decades on end, the same applied to the use of nuclear weapons in an eventual conflict between South and North Korea, China and Taiwan, China and India, India and Pakistan, Iran and Iraq, or any other

couple of half way developed regional powers. Most of these states either already have nuclear weapons or else should be capable of acquiring them in the not-too-remote future if they really want to. The prospect of any two of them fighting each other after having acquired such weapons (even if only one side should have them) is fearsome indeed; yet strangely enough this possibility is not even mentioned in much of the literature purporting to set out the military balance between those countries.(2)

To understand the future, study the past. Here it is assumed that the only way in which one can come to grips with the behavior of regional nuclear powers is by comparing them to the countries which first acquired nuclear weapons, i.e the superpowers;(3) and that the military behavior of those superpowers itself reflects the historical development of war. Accordingly, chapter I presents a brief outline of the evolution of warfare before the invention of nuclear weapons, concluding with an explanation of the direction in which it would have headed had those weapons not been invented. Chapter II reverses this line of reasoning, dealing with the effect which nuclear weapons have had on the military-political relations of the countries which first developed them. Chapter III constitutes the study's real core. It traces the process whereby nuclear weapons were introduced into South Asia and the Middle East, respectively, in order to answer a single critical question: to what do does the kind of logic that has led to the demise of war between the superpowers also apply to them? Finally, the concluding chapter pulls the threads together by arguing that, though nuclear weapons may cause strategy, regular armed forces, and the state itself to disappear war qua war is not only alive and well but about to enter a new epoch.

In writing this monograph, I was confronted by two fundamental obstacles which are best discussed at the outset. First, there is the almost total absence of reliable, officially-certified, sources and documentation,

particularly as concerns the crucial chapter III. Forming a sharp contrast with the situation in the US, where an enormous body of material is freely available for research, almost all the countries with which we are concerned keep silent concerning the reasons which made them build nuclear weapons, the doctrines for using them, and sometimes also the way they perceive such weapons in the hands of their rivals. Most deny having them at all, while a few go so far as to treat any attempt to investigate the problem as a violation of state security for which people may be, and have been, shot. The usual method around this obstacle is to combine the material that <u>is</u> available with interviews; still, it would be idle to pretend that it can be wholly overcome. This author has not had access to the innermost thoughts of the principal decision-makers involved. Even if he did have such access, it might be hard to say where truth ends and deception--including not least self deception--begins.

Second and possibly more important still, this study is unusual in that one of its chapters--the first--attempts to answer a "what if" question. Another, the fourth, claims to paint a picture of the future. Apart from being subject to all the risks which normally attend any attempt to deduce the future from the past, it therefore constitutes an exercise in make-believe. Truth to say we do not, can not, know what would have happened if nuclear weapons had never been invented. As the surprise Iraqi invasion of Kuwait in August 1991 proved once again, the fact that country X has managed its defense-policy in a certain way for a number of years does not necessarily mean that it will continue to do so tomorrow, and indeed to believe this can itself be the most dangerous mistake of all. This problem, like the one discussed in the previous paragraph, cannot be overcome with any degree of certainty. Therefore let the reader beware as he goes along; you pays your money, and you picks your choice.

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Chapter I: The Road to Hiroshima

The road to hell is paved with good intentions. The intentions of those who built the first nuclear weapons were mostly good; scientific ambition aside, their goal was to help their country win World War II, the largest and the most destructive ever fought, as quickly and painlessly as possible.(1) We cannot blame them for failing to foresee, most of them, that nuclear weapons would help push history--and military history in particular--into an entirely new direction. To understand the nature of that direction, it is first of all necessary to retrace our steps. Passing the hairpin turn formed by the 6th of August 1945, we must give a brief description of what went before, starting at the beginning. For our purposes, that beginning is formed by the Peace of Westphalia in 1648. The reasons for that choice will become apparent later on.

a. War and the State

We today are accustomed to identify war with the state. Conversely, the state might be defined as the only organization which, in the modern world, has the legal <u>right</u> to resort to organized violence, read war.(2) So firmly established is this usage that armed conflicts which do not answer to that criterion--in fact, the great majority--are commonly denied the name of war properly speaking. Instead they are known under a variety of other epithets such as civil war, people's war, low intensity war, insurrection, guerrilla, terrorism, banditry, and crime.

Contrary to the modern view which links war with the state, however, the latter is a comparatively recent invention. During most of human history, and in many places until quite recently, the predominant form of social

organization was the clan, tribe, or horde. Often the members of such societies did not even have a clear idea of government, let alone of the state as we understand that term; yet for millenia on end they engaged in organized violence against each other.(3) What is more, some of these tribes set up coalitions and, by so doing, transformed themselves into formidable fighting machines almost overnight. From the time of the ancient Hyksos to that of Ghengis Khan, they proved themselves more than a match for some of the mightest empires that the world has ever seen.

Though the ancient empires which grew up in such centers as Egypt and Mesopotamia from 3,000 B.C did have institutionalized governments they, too, were not states; to speak with Max Weber, they are best described as "patrimonial" organizations in which rulers stood to ruled--in theory, at any rate--as parents to children who have no legal existence separate from that of their elders.(4) Since the concept of the state was unknown, neither Greek nor Latin have words corresponding to it. The closest equivalents, koinon and res publica , are best translated as "the assembly of people" or "that which is common".(5) The entities which these words described differed from the state in that they did not have a legal existence separate from the people who comprised them. For example, Athenian citizens could and did bring lawsuits against their magistrates. However, for them to to the same in regard to the polis would be impossible and, in fact, meaningless. Nevertheless, it goes without saying that classical city states and ancient Empires not only waged war but often did so with an artistry, and on a scale, which still command our admiration.

To use another illustration, in the feudal Middle Ages we encounter a society whose entire raison d'etre was based upon, not to say dedicated to, warfare;(6) yet again we find that the state as an organization was unknown. The Latin term status , whose original meaning was simply "situation", was

slowly coming to be used to signify "estate" in the sense of the three estates into which society was divided. In the fifteenth century it could also mean something like "organization" or "welfare".(7) However, it was the essence of feudal society that it did not consist of a series of disparate polities, each of them sovereign in regard to its internal affairs and responsible to none above itself. Instead it conceived of itself as an organic pyramid consisting of reciprocal rights and obligations. Instituted by heaven, custom, or both, these formed a legal network linking lord to vassal, nobleman to commoner, and baron to serf.(8) Within this structure, war was considered not as something waged by one society against another but as a class prerogative. Violence employed by the lower classes against the upper ones, or vice versa , was known as rebellion or "chastisement"; whereas that which commoners directed against each other tended to be regarded as burlesque. When members of the upper classes fought each other, as they frequently did, they did so in the name not of "politics" or "interest"--the very terms had yet to be invented--but in that of their respective rights. Under such circumstances war was a private matter; or perhaps it would be more correct to say that the distinction between "public" and "private" which underpins our modern concept of the state did not yet exist in the same form.

The centuries between 1450 and 1648 are often described as the formative period of states.(9) However, that fact may be more obvious in retrospect than it was to contemporaries. As might be expected from so fundamental a process, the transition from the medieval politico-socio-economico-cultural order to the modern one was marked by widespread disorder, confusion, and violence. At the heart of the transformation was the nobility's loss of its former monopoly over legal violence, a process which asserted itself from two directions at once. Coming from below, the right to make war was usurped by every kind of non-aristocratic contractor; people who, working either with

their own capital or that which they could borrow, raised private armies and used them to turn a profit for themselves and for whoever hired their services. Coming from the top, rulers such as the Emperor and the kings of Spain, France, and England who previously had been merely the greatest of nobles sought to deny the latters' right to wage war except on their (the monarchs') behalf. Finding its military prerogatives squeezed from both directions, on several occasions the nobility rose up in armed rebellion; sometimes with success, as in Poland, but usually without.

Adding to the confusion, the old religious unity came to an end. Where before the Reformation there had been a single dominant religion--namely, Catholicism--now there were at least three, all of which were quite prepared to use violence in order to demonstrate that god's flesh and blood could be turned into bread and wine or vice versa . These clashes soon became mixed up with the depredations of military enterpreneurs and the rebellions of discontented noblemen, to say nothing of mutinous armies and the efforts of communities everywhere to defend themselves against the excesses committed by all three. The ensuing multicornered conflicts plunged entire countries into civil war; this was what happened to England during the fifteenth century and to France, Germany, and the Netherlands in the sixteenth. The process culminated in the confusion of the Thirty Years War which lasted from 1618 until 1648. In this pan European free for all, everybody took turns fighting everybody else until one third of Germany's population is said to have perished.

In the long run, nevertheless, the victors from the struggle were the great monarchs. Allying themselves with the urban bourgeoisie, or else drawing on treasure in the New World, they were able to acquire greater financial resources than anybody else. Having acquired financial resources, they purchased more cannon and blasted their opponents' levies off the field.

By the 1620s Richelieu, building on foundations laid by Henry IV, was setting the pace. Employing the most varied pretexts, he had the castles of the nobility demolished one by one, thus destroying the basis of its military power and establishing the king's monopoly over the conduct of war once and for all. Under Louis XIV the proud noblemen who had formed the Fronde and gone to war to restore their privileges were forced to live at Versailles. Here they were reduced to competing among themselves to see who would hold the king's chamber pot; an example which was not lost on other monarchs abroad.

The state was also able to establish its war-making monopoly vis a vis other organizations remaining from previous periods. Though city states and petty principalities continued to exist until the eighteenth century and beyond, particularly in Germany and Italy, henceforward their principal role in international relations was to be fought over by their more powerful neighbors. The military entrepreneurs, who as late as the Thirty Years War had often operated almost independently of public authority, were either destroyed by royal power--as Wallenstein, the greatest of them all, was--or absorbed by it; and so were the armed forces at their command. The heads of international organizations, such as the Emperor and the Pope, ceased to exercise politico-military power except in so far as they also presided over states. Religion disappeared from foreign affairs; the Treaty of Westphalia was the first in which neither God nor the medieval Respublica Christiana were so much as mentioned.

The rise of the great monarchies was accompanied by that of political theory. Separating itself from law for the first time,(10) the purpose of theory was to justify the creation of the new states and to explain the process whereby this has come about. The first great writer worth mentioning in this context was a Frenchman and a Calvinist, Jean Bodin. His great work, Six livres sur la republique ,(1576) was very much a reflection of the Wars of

Religion through which he lived and under which he suffered. The term sovereignty owes its popularity to Bodin. He used it to denote a public authority, i.e that of the king, which in contrast to the old feudal polities admitted no superior above itself and no outside interference in its affairs. The authority in question was to operate under the heading of politique , a term by which Bodin meant the opposite of fanatique . Its task was to protect the lives--and, almost as important, the property--of all Frenchmen, regardless of religion, against the depredations of particularist noblemen on the one hand and the universal pretensions of Pope and Emperor on the other.(11)

Second only to Bodin in formulating the theory of the modern state was a Dutchman, Justus Lipsius, who likewise owed his inspiration to the sufferings caused by civil war. Lipsius developed Bodin's thought in that, for the first time since the fall of Rome, right (ius) and law (lex) came to be clearly separated from each other. Right in the old medieval sense of a privilege inherent to certain people, or groups, or things, was abolished; henceforward ius only existed by virtue of the lex specifically enacted to create it. Lex itself was defined as a distinct, more or less fixed, man made, explicit, and written body of rules by which the community ought to be governed. Now Lipsius, who was personally very subservient to authority--in this case that of Philip II of Spain--did not go as far as saying that the ruler was subject to the law, and in any case he agreed with Bodin that it was the ruler who made the law. However, his ideas did lead to the conclusion, subsequently adopted by late seventeenth and eighteenth century monarchs who were brought up on his work, that the ruler's most important task was to apply the law; and that, in doing so, it was not he who owned the state but the other way around.(12)

Finally, the threads of theory were woven together by Thomas Hobbes,

another figure who was motivated in large part by his experiences during the English Civil War (1640-1648) when his property was confiscated and he was forced to go into exile. Hobbes' Leviathan was perhaps the most important work on politics written in modern times, the first to concern itself with the state as such rather than with the attributes which its government ought to have or the way in which it ought to exercise its functions. While following Bodin in regard to sovereignty, Leviathan took the critical step of establishing the state as an abstract entity with an independent legal personality; in other words, an organization separate from both rulers and ruled but incorporating them both. Thus constituted, its task was to supress the squabbles of its citizens, monopolize violence in its own hands, and guarantee the kind of law and order under which alone civilization could flourish.(13)

With the publication of Hobbes' work in 1651 the theoretical structure of the modern state as the only organization which, in the modern world, is entitled to make war was substantially complete. Subsequent writers such as John Locke, Charles de Montesquieu, David Hume, and Jeremy Bentham would investigate the sources from which the state drew its authority. They explored its rights and duties in respect to its citizens (and vice versa), and disputed the best way in which it ought to be governed. As they did so, the remaining pre-modern, feudal, restrictions on state power were removed: whether by a change of government (England, 1688), or by administrative fiat (Austria from 1748 on), or by a slow, imperceptible process culimating in a violent explosion (France, 1789). The functions which the state was supposed to carry out--and the civil service which permitted it to carry them out--were gradually expanded. From a mere power for imposing peace and quiet it was turned into a machine for attaining the greatest happiness for the greatest number.

With the notable exception of Rousseau, most enlightenment thinkers had been content to follow Hobbes in that they started with the individual, passed to society, and ended with the state as the means to regulate that society and those individuals. This, however, was not the case of Georg Friedrich Hegel early in the nineteenth century. His was a period when the Napoleonic wars were at their height and when reaction against his conquest caused a wave of nationalism to sweep over Europe. Hegel's contribution was to justify this nationalism by standing previous thought on its head; according to him, it was not "civil society" and the individuals comprising it which created the state, but the state which created "civil society" and, ultimately, the individual. He thus deliberately set out to transform the state from a mere military and administrative apparatus into an ideal or, to use his own inimitable language, the "earthly manifestation of the divine idea". Supposedly whatever goes beyond the ordinary, day to day, commercial existence of society--everything good, wonderful, and sublime it contains--is personified by the state. The state endowes the individual's life with meaning, which in turn is why it is entitled to demand his ultimate loyalty, even unto death.(14)

Compared to the original idea, however, these were mere refinements. Regardless of the way they wanted to see its functions regulated, and regardless also of the ethical significance which, increasingly, they came to attach to it, for two centuries after Hobbes no really important author doubted that the state was the principal organization into which civilized humanity was, ought to be, and would continue to be divided; and it was during this period that the concept, originally confined to Western Europe, began to spread beyond the latter's borders to places such as Russia, North America, and Australasia. Only towards the middle of the nineteenth century did there appear a first-class political theorist who objected to the idea of the state as such. Where his predecessors from Montesquieu on had interpreted history

as a clash between states, Karl Marx saw it as a struggle between socio-economic classes. Where they had regarded it as a prerequisite for civilized life, he saw it merely as an instrument for man's oppression. Where they had wanted to perfect the state, he sought its destruction; considering this a conditio sine qua non for man's emancipation from the chains by which, throughout history, he had been bound.(15)

In retrospect, it could be argued that Marx's underestimation of the state was the greatest single error he committed. During the second half of the nineteenth century the living standards of the urban proletariat, while still low, started to rise. Partly for this reason, partly because most regimes now incorporated at least a limited form of franchise, the revolutionary upheavals that had punctuated the period before 1848 died away. The newly emerging technologies--railways and the telegraph--for the first time enabled states to exercise effective control over their entire territories. Instead of being forcibly overturned and then withering away, as predicted, they started marching from strength to strength.(16) The size of the administrative machines at their disposal, to say nothing of the share of GNP which they commandeered in order to support those machines, grew by leaps and bounds; a process nowhere more evident than in the Communist states which, from 1917 on, claimed to implement "Marxist" doctrines. If only because the newly created machines had to be given something to do, the state began to expand its functions beyond anything foreseen by the original theorists. It sent its tentacles into one field of human activity after another, until finally it came to regulate even the quality of the air that we breath.

In many ways, the climax of these developments was reached between 1914 and 1945. For fully thirty years, by far the most important purpose to which states used their newly-found muscles was to fight one another on an unprecedented scale. The state's growing internal strength, itself the

product of centuries of development, underpinned its ability to mobilize resources and wage war. Conversely, the more intenstive the war effort the greater the state's ability to interfere with the lives of its subjects and the greater also its willigness to do so. Spending as much as 50 percent of GNP to fuel the war effort, states put as many as ten percent of their populations into uniform and kept them there for years on end; as they did so, they discovered--not entirely without surprise--that millions of people who perhaps ought to have known better were willing, often even eager, to let themselves be killed on their behalf.(17) Had Marx been alive today, no doubt he would have been painfully surprised to see that, until very recently, it was not religion which supplied the masses with the opium that they need but the state.

To sum up, 1648 marks the beginning of a three hundred year period in which the dominant form of organization under whose banners people went to war, and were asupposed to go to war, was the state. As defined by Hobbes, the man who in many ways was its true father, the state is a sovereign entity which _creates_ the law and, accordingly, admits no legal restrictions except those entered upon by its own free will. Equally important, the modern state differs from previous political organization in that it is an abstract entity possessing an independent legal personality. Without being identical with either rulers or ruled, it comprises them both and is supposed to benefit them both.

Originally conceived as a means, a mere machine for imposing law and order upon a disintegrating world, after 1789 the state began to be seen as an end, indeed as the highest end of all. As this process took hold, the idea of the state as the supreme entity which alone was capable of providing for a life worth living spread from Europe in all directions. With the result that, since 1945, it has become the highest aspiration of every people on earth to

have a state of their own and to see it recognized by others like it.

b. The Organization of Violence

The quintessential characteristic of the state, as we saw, is the monopoly which it exercises (or claims to exercise) over legal violence, read war; conversely, its rise to dominance over other types of organization which preceded it or which existed side by side with it would have been inconceivable without this monopoly. However, we have defined the state as an abstract legal entity. As such, it cannot engage in the practical business of waging war but requires a concrete instrument to do so on its behalf. More and more as the seventeenth century went on, that instrument was the standing army or, to be precise, the army tout court .

Just as the state is an invention of the modern age, going back no further than three or four centuries at the most, so armies in the sense of disparate, permanent, legally established organizations charged with the exercise of organized violence on its behalf represent a historical innovation. Some superficial parallels to the contrary,(18) most societies before 1600 or so did not have armies in our sense of the word; either society itself constituted the army, as was the case in primitive tribes and also in classical city states, or else the right and duty to make war was reserved to a certain class, as in feudal societies in Europe, Japan, and elsewhere. The first type of organization meant that there was no distinction between adult males and warriors, even to the point that in many languages the same word was used to describe the two.(19) The second meant that feudal levies did not exist as separate organizations, but rather comprised the members of the upper class who abandoned their day to day occupations and put themselves on a war footing to follow their lord's call. Both types of force had this in common

that they only came into being in times of war and dissolved themselves as soon as it was over. Also, given their social structure, they were incapable of being used as an "instrument" in the hands of anyone except themselves.

Already by the middle of the fourteenth century, ruling princes sometimes permitted feudal military service to be commuted for money payment known as scutagium (in France, this was the origin of the infamous taille). The sums thus raised could be used to engage mercenaries, in other words to set up the kind of force which, while still subject to dismissal at the end of the war, would act as an instrument in the hands of him who paid its wages so long as they were paid. Lacking any loyalty to an abstract entity--such as barely existed in any case--mercenary armies differed from those of the most advanced present-day states in that they could be used, and were designed to be used, both for internal purposes and for exeternal ones. Accordingly they often included foreigners in their number, and indeed if the idea was to use them to hold a prince's own subjects in check foreigners without local ties were considered preferable. Thus the rise of mercenary armies rapidly led to the internationalization of warfare. Serving under their own commanders, entire units consisted of non-nationals and were liable to switch their allegiance as the fortunes of war, and their masters' ability to pay, dictated.(20

The details of the process by which mercenary armies were turned into standing professional ones need not detain us here. Already in the middle of the fifteenth century there was a tendency, first manifested in France under Charles VII, to retain at least some of the mercenaries between one war and the next. During the second half of the sixteenth century the most important European armies--those fielded by the Spanish, French, and Imperial monarchies in particular--came to include a standing core; though its relative unimportance can be judged from the fact that Lipsius in 1598 considered that two "legions" with a total of 13,200 regulars were sufficient for the needs of

a "large" state such as France or Spain.(21) As late as the time of the Thirty Years' War the great majority of the forces of every prince were mercenaries, and indeed the longer any given conflict the more true this became. Possessed of no loyalty towards the population, and fighting solely for gain, these forces when left to their own devices would cheat their employers by squandering his money as well as engaging in every kind of depredation. To impose some kind of control over them princes began to appoint itinerant officials, known as inspectors or commissioners, whose task was to regulate, to provide, and to review. There was thus created the nucleus of a new type of bureaucracy which, as it grew, took over some of the rulers' functions and itself helped contribute to the idea of the abstract state.(22)

Though the pace at which mercenary forces were brought under direct royal control varied from one country to the next, by the first quarter of the eighteenth century the process was substantially complete. From Spain to Muscovy, the old medieval militias were either allowed to languish or else abolished by administrative fiat. Every state now had at its disposal a standing army of paid professionals whose function was to wage war and who tended to monopolize the latter's conduct in their own hands. When armor was discarded and uniforms introduced after 1660, the separation between the armed forces and the rest of society was accentuated. Uniforms served less to help combatants distinguish one another, as is commonly supposed, than to mark those who were licensed to engage in legal violence from those who were not. Next came the introduction of a separate military code of law in the form of the articles of war; separate military customs in the form of drill, the salute, and, for officers, the duel; and separate military dormitories in the form of barracks. All of these promoted, and were intended to promote, the process of by which war ceased to be the business of society as a whole but

was concentrated in the hands of a specialized organization. The process culminated in the establishment of separate police forces, which got underway during the last two decades before 1800. Once responsibility for maintaining day to day law and order had been taken out of their hands, armies were free to focus on their military functions exclusively.(23)

Another aspect of the process whereby the conduct of war was monopolized by state-run armies was the separation of military commanders from rulers and government officials. This, too, was a novel development without precedent in history. Tribal societies were led--to the extent that they were led at all--by the same chiefs in both peace and war. In classical Greece and Republican Rome the most important magistrates also acted as commanders; with the result that civil and military authority was known by the same name (in Rome, this was _imperium_) and was wielded by the same people. Hellenistic monarchs, following the precedent set by their Oriental predecessors, commanded their own armies as a matter of course. The same was true of the Roman Emperor, and indeed it should not be forgotten that he was _Imperator_ , or victorious commander, before he was anything else. Nor did our present-day separation between military and civilian power exist during the Middle Ages and the Renaissance. From the Emperor down, medieval princes of all ranks were themselves knights. They went to war as a matter of course, led their own armies on campaign, and unless prevented by incapacity or age (sometimes even if they were prevented, as in the case of blind King John of Bohemia) fought in person. As late as the first half of the sixteenth century, a ruler who refused to command in battle risked contempt and loss of his authority.(24)

The turning point in this, as in so much else, came during the second half of the sixteenth century. Emperor Charles V, who reigned from 1520 until 1556, still commanded his armies in person. Lacking a permament capital, he

spent much of his life travelling from one campaign to the next; so closely associated were he and his army that on several occasions he challenged Francis I of France to a duel (Francis, in turn, commanded at Pavia in 1525, was taken prisoner, and has to pay ransom). Charles' son, Philip II, also known as _el rey prudente_ , declined to follow his father's example. Instead he settled at Madrid where he built a new palace, the Escorial, to accomodate himself, his aides, the state papers, and incidentally the pictures that he liked to collect. Like a spider in his web--a contemporary description--he relied on bureaucratic methods to keep an eye on his commanders in places as far apart as Southern and Northern Italy, Burgundy, the Netherlands, the New World, and the Philippines.

As the business of government continued to expand during the next two centuries, one by one monarchs were forced to abandon their old nomadic habits and become sedentary. In most cases they ceased to accompany their armies in the field; alternatively they played a ceremonial role, as did Louis XIV who liked to made a dramatic appearance at the end of a siege and preside over one of those _belle capitulations_ which Louvois and Vauban had prepared for him. By the time of the Seven Years' War Frederick II was the only reigning monarch to command in person, whereas his principal opponents (admittedly, two of them were women) preferred safety to activity and remained ensconed in their palaces. Of the three Emperors who were present at Austerlitz, only one exercised _de facto_ command whereas the other two contributed to the outcome mainly by placing obstacles in front of their own subordinates. By the time of Waterloo the lesson had been learnt and rulers who operated on the old model had become an endangered species; during the nineteenth, they died out altogether.

Starting at the top, the process whereby government and command were becoming separate was steadily pushed downward. One of the results of

creating standing armies was that functions which, until then, had been carried out intermitently were necessarily put on a permanent basis. By the second half of the seventeenth century most states were building their commissioners into a rudimentary ministry of war, headed by a minister of war.(25) The ministry consisted of a body of officials, clearly separate from the army, whose function was not to fight but to oversee the process of recruiting, clothing, equipping, housing, supplying, and paying the troops. As time went on they also began to look after problems such as officer schools, pensions for ex servicemen, orphanages, institutions to house the invalids, arms-procurement, and so forth; early in the nineteenth century the task of administering occupied territories in the armies' rear was added to their functions.(26) Again, the establishment of these ministries had a double effect. While freeing the armed forces to wage war, at the same time they constituted another step in the process whereby those forces were becoming separate from the institution of government on the one hand and from the civilian population on the other.

The development of international law, itself a seventeenth century invention, both reflected these changes and promoted them. Writing during the Thirty Years' War, Hugo Grotius was the first to abandon the "Just War" tradition and to define war simply as a quarrel waged by sovereign princes with the aid of their armies. By the time of Emmerich de Vattel, whose classic work on the Law of Nations dates to the 1750s, the emphasis had changed from princes to states. War, as distinct from every other form of organized violence and the only legitimate one, was defined as something directed by governments, waged by armies, and paid for by civilians. Each of these three groups had its own rights and obligations in respect to ius in bellum , being expected to stick to certain rules of behavior and be awarded certain privileges in return. The threefold division applied to all states

regardless of regime; so firmly established did it become that Clausewitz in On War regarded it as the indispensable foundation on which any theory on the subject must build.(27) Later during the nineteenth century the "trinity" of government, army, and civilian population came to be seen as one of the characteristics of progress in general. It had to be adopted by any non-European country aspiring to so-called "civilized" status; conversely, such peoples as did not adopt it were considered fair game for the maxim guns of their European conquerors.(28)

The coming of the French Revolution in 1789 was to change the methods by which armies were raised and to widen the social basis from which they were recruited. From this point on wars were supposed to be waged on behalf of the people, rather than merely at their expense, permitting a very great expansion of the scale on which they were waged as well as the energy with which they were waged. Still, the advent of general conscription did not in itself disturb the way government, army and civilians divided the business of war among themselves. Though Napoleon often turned a blind eye when his men helped themselves to the civilian populations' possessions, at any rate there was no question of massacring those populations, enslaving them, or driving them from their homes. He could hate with the best, yet with the single exception of the Duke of Enghien (a Bourbon Prince whom he had kidnapped and executed) there was never any question of trying to murder individual opponents or waging war ad hominem . The Grande Armee usually respected existing international law in regard to prisoners, wounded, truces etc., as did its enemies. Throughout the period the major campaigns at any rate remained firmly within the trinitarian tradition, a question of one army fighting another.

However, on another level the effect of the wars was very different. As Napoleon's armies overran one country after another, in one country after

another there arose popular resistance movements variously known as guerrilleros , partisans , and Freikorps . Flouting the orders of their governments on the one hand, and merging into the people on the other, these bodies continued or resumed the fight even after the regular armies had been defeated. They thereby threatened to upset the established order in their own countries; conversely, the French in combating them did not follow the ordinary rules of war but engaged in the kind of barbarities so graphically painted by Goya. By 1813 Germany, Italy, and even France--to say nothing of Spain--were becoming infested by armed bands who were not regular soldiers, thus coming close to recreating the conditions of the Thirty Years' War. What would have happened if the Battle of Waterloo had not been as decisive as it was we cannot say. All we know is that the first thing governments did after 1815 was to suppress the bands, a process which here and there required the use of force.

Whatever might have been, the long run effect of the Revolutionary Wars was to reinforce the system whereby war, and indeed the state as a whole, was organized on the principle of a threefold division of labor between government, army, and people. During the subsequent period of reaction, most European governments feared their own peoples more than they did each other. Constantly anticipating the recurrence of revolution, the last thing they wanted was to put a rifle on the shoulder of every democratically minded citizen. As professional armies and selective service reasserted themselves, the separation between peoples and armies in some ways became even more strict than it had previously been. In France and elsewhere, the officers as far as possible were again recruited from the aristocracy. The old practice of systematically rotating units from one province to the next to prevent them from forming local ties was revived. As civilian dress tended towards sobriety--these were the years when the business suit took over from the old

aristocratic garb--uniforms grew more colorful and more extravagant than in any period before or since. This was carried to the point that, under Louis Philippe, orders were issued for soldiers to wear whiskers and for the whiskers to be be black.

The second half of the nineteenth century was to see the reversal of the trend towards sartorial magnificence and also brought general conscription in many countries. Nevertheless, the threefold division of labor between governments, armies and peoples not only persisted but became more firmly established than ever. Beginning in the early 1860s, a whole series of international meetings were held whose task was to obtain formal, written approval for this situation. The last vestiges of the old nontrinitarian tradition, such as states' right to issue letters of marque to privateers, were swept away. War was formally redefined as something which could only be waged by the state and for the state, a definition which had the effect--perhaps unintended--of putting the majority of non-European societies hors de loi in this respect. To allow the regulations to be observed, states undertook to wage war solely by means of their armed forces, properly uniformed, properly registered, and properly commanded by their authorized representatives. The use of mercenaries, i.e personnel other than state members, was forbidden. So was the participation of members of the state who did not form part of the armed forces, i.e civilians; in return, their lives and, "military necessity" permitting, their residences and property were to be spared. Finally, a whole series of conventions regulated the treatment which members of enemy governments, diplomats, emmissaries, and the like should receive.(29)

When these arrangements were put to the test during the World Wars of 1914-1945, some of them held out better than others. During World War I the distinction between soldiers and civilians was maintained on the whole; the

major exception was the Balkans, a backward region where it had been weak to begin with and where both sides freely massacred each other. During World War II it broke down to the extent that both sides engaged on "strategic" bombing of each other's cities, even such as did not contain military targets. Too, terrible atrocities were committed by the German and Japanese occupation forces against the civilian populations under their control. Still, in the West at any rate armies by and large did not wage war on civilians, except to the extent that civilians also rose and waged war on them. Though enemy citizens were interned everywhere, nowhere was an attempt made to use them as hostages. The war had no sooner ended, moreover, than public adherence to the conventions reasserted itself. In both Europe and the Far East, a few of the leaders held chiefly responsible for initiating the atrocities were put on trial, found guilty, and executed. The members of the British Bomber Command, which had so much of the execution on its conscience, were punished to the extent of being denied a Campaign Medal and not having their Official Dispatch published.(30)

At the upper end of the scale, in both World Wars the distinction between armies and governments held up tolerably well. Nowadays we have grown accustomed to the fact scarcely a week passes without an embassy being attacked or diplomats being taken hostage somewhere in the world. By contrast, in 1914-18 and 1939-45 existing international conventions concerning their privileges were broken seldom if ever; neither the Germans nor the Soviets tried to detain each other's diplomats when war broke out between them in June of 1941. Perhaps more surprising, as far as we know there was no attempt by heads of state--though they counted some of the worst scoundrels who ever lived--to wage war _ad hominem_. Unlike renaissance princes, for example, they did not systematically set out to assassinate one another, members of their families, or their principal assistants; and indeed Hitler is

said to have rejected the idea when it was suggested to him.

To sum up, nothing is more characteristic of the organization of modern "civilized" warfare than the threefold division of functions under which it is the government that directs, the army that fights, and the people who watch, pay, and suffer. So firmly entrenched it this organization that it is often taken almost for granted; yet a comparison with earlier periods shows that it dates back no further than the second half of the seventeenth century at the earliest. The system whereby war is a monopoly of armies, indeed the appearance of armies as such, not only coincides with that of the state but is itself both a product of the state and one of the latter's outstanding characteristics. Since previous societies did not know the state, the kind of armed force by which the latter wages its wars did not exist either. Therefore, should the state disappear--or, which amounts to the same thing, be forced to relinquish its monopoloy over legal violence--then armies in our sense of the term can be expected to disappear with it.

c. The Birth of Strategy

The higher conduct of war is usually known as strategy, even to the point where war itself may be, and has been, defined as a "strategic" activity.(31) Therefore, the reader may be surprised to learn that during most of history the term strategy either did not exist at all or else was used in an altogether different meaning.(32) Here I shall argue that strategy is a modern phenomenon with a clear beginning in time. As states and armies rose, so did strategy.

We today are accustomed to think of war as conducted on three separate, if interacting, levels,. These are the political, the strategic, and the tactical (here I shall ignore "grand strategy", a neologism coined to describe

the way twentieth century "total" strategy tended to merge with politics, thereby ceasing to be strategy and turning into something else). Under Clausewitz's classic formulation, the task of politics is to control strategy and use it as an instrument for attaining their ends. This in turn presupposes a clear conceptual separation between government, the directing brain, and the armed forces which it employs to attain its ends. However, we have already seen that this particular division of labor, so far from being self evident or eternal, is itself largely the product of the modern state. When the armed forces and/or their commanders themselves _are_ the political entity--which happens to have been the case during most of history--political and military operations become indistinguishable. Strategy as a separate field of activity ceases to exist: which incidentally explains why, from Clausewitz down, the most important modern works on the evolution of strategy tend to ignore those periods.(33)

To illustrate these relationships, consider the record. As any student of Thucydides, Xenophon, and Demosthenes knows, from at least the fifth century B.C only a minority of wars among Greek city states were decided by military means. Cases in which a campaign, a battle, or a siege led to a straightforward victory and were followed by a formal surrender were rare: instead, the normal way to "decide" a war against this city or that was to bring about a change in its internal regime and, consequently, its allegiance. The role played by _stasis_ , or sedition, was as important as that of strategy, a situation which led Philip II, father of Alexander, to comment that where an army cannot pass a donkey laden with gold often could. The methods used in _stasis_ were extremely varied, consisting of what can only be called dirty tricks of every kind. They included armed risings by one faction against another; the admission of foreign troops into the city; the assassination of opposing leaders; the expulsion of their followers; and the confiscation of

their property (sometimes, their wives as well). None of this fits the rubric of strategy as we understand that term. Nor would any of this have been conceivable if the armies of these cities had not been identical with their populations and, therefore, both willing and able to take part in politics.(34)

Similarly during the Middle Ages--in many cases, right down to 1648--our modern distinction between the "private" and "public" domains was almost entirely absent. Hence strategy was but one way, and a rather ineffective way, for bringing about the type of politico-legal change that was the aim of warfare. At the top, subversion, bribery, and hostage-taking directed against a man's family and his principal retainers played as large a part in war as did military operations properly speaking (one result of this was that, until about 1500, the preferred choice for diplomats and envoys were ecclesiastics who possessed immunity). At the bottom, by far the most important means by which war was fought consisted of bringing economic pressure to bear in the form of raids--known as _chevauchees_ and _guerre guerroyante_ --against one's rival's peasantry from whom he derived his income. So long as they did not take place during times of truce, most such activities were regarded as perfectly legitimate. Far from being merely ancilliary to the conduct of war, their use could be carried to the point that large scale military operations all but disappeared. A perfect example is provided by the conflict which is known to the English speaking tradition as the Hundred Years' War but which one French historian has called _la guerre peu meurtiere_ ;(35) during the whole of which there took place the sum total of three major battles.

If, on one end of the scale, strategy was almost indistinguishable from politics, at the other the same applied to tactics. The most important reason for this was the nature of logistics. During most of history military transport consisted of the backs of men, assisted by animals and the vehicles

to which they were harnessed. Too, modern methods for conserving foodstuffs had not yet been invented. Hence, unless waterways were available, armies could not transport their own supplies over any distance or carry them for any length of time;(36) to survive they had to exploit the surrounding countryside, which in turn was less a question of "strategy" than of persuading or intimidating the population. Until shortly before 1800, for every day spent in battle perhaps twenty were devoted to foraging.(37) Lines of communications in our sense of that word, i.e a route or routes (let alone a "zone") linking armies with their bases and utilized to maintain a regular series of convoys moving in both directions, did not exist.(38) The campaigns of Alexander the Great, Julius Caesar, Gustavus Adolphus, and Marlborough--whose most celebrated battle was fought with an inverted front--illustrate the point. Had these and other commanders depended on a regular flow of supplies from the homeland, they would have been utterly unable to operate or to exist.

To be capable of feeding large bodies of troops, a country had to be fairly populous. Conversely, demographic considerations pertaining to the density of populations (usually a good indication of a country's propserity) tended to canalize the operations of armies;(39) in Europe, this was one reason why the majority of campaigns took place in the Low Countries, Southern Germany, and Northern Italy. So long as the country in which they operated was reasonably prosperous armies hardly needed lines of communications. But for the limits imposed by natural and manmade obstacles, they were almost as free to move about as a navy at sea. Sometimes such armies could be starved out by "devastating" the region from which they drew their supplies, in which case they would eat all there was to eat before proceeding elswewhere and repeating the procedure. However, they were immune to the power of strategy as we have come to understand that term. They could not be outflanked,

encircled, or cut off from their bases--in so far as they had bases--except in a narrow tactical sense.

The second reason why strategy was so slow to develop may be found in the nature of communications-technology. Whereas battles could directed by a variety of visual and auditory signals such as flags, standards, bugles, and drums, virtually the sole method by which information could be sent over long distances consisted of messengers. However, messengers, even mounted ones, are comparatively slow. The presence of an enemy tends to make them slower still, to say nothing of the problem of reliability. With rare exceptions, the use of messengers did not permit the coordination of large bodies of troops moving at considerable distances from each other against a common enemy; which in turn meant that strategy as it has been understood from Napoleon on was impossible. Most campaigns saw the forces moving slowly forward. Having located each other by means of their scouts they would halt, set up camp, issue challenges (sometimes, for weeks on end), and finaly fight a pitched battle by a kind of mutual consent between the opposing commanders.(40) As late as the time of Frederick the Great the slowness and unrelability of long distance communications compelled armies to move about in large, solid, blocks whose wings were no more than a few miles apart.(41) Moving about in large, solid, blocks with their wings no more than a few miles apart, the repertoire of "strategic" maneuvers that they could carry out was extremely limited.

Finally, a third major reason behind the belated separation of strategy from tactics consisted of the weapons-technology in use. During most of history, so short was the range even of the most powerful weapons that an enemy more than, say, a kilometer away might as well be on the moon. Under such circumstances war properly speaking only began when the enemy was immediately at hand; battle was a tournament, a distinct event limited in time

and space and usually lasting no more than a few hours. Conversely, whatever took place on campaign before and after battle was not war but, as one modern authority put it, an extended walking tour accompanied by large scale robbery.(42) These realities were reflected in the way commanders operated.(43) The paramount role played by battle in the waging of war helps explain why, until about 1650, most field-commanders did not content themselves with "conducting" campaigns but themselves donned armor and fought in person. While fighting in person they had little time to direct the battle, let alone reflect on its use towards achieving a strategic goal. Many campaigns were decided in face to face encounters between the main forces lasting a few hours. To this extent, strategy either did not exist at all or was of marginal importance.

Thus, it is no accident that the use of the term "strategy" in anything like its modern sense only dates to Joly de Maizeroy, a French writer active in the last years before the Revolution.(44) By this time the separation between ruler and state had become established in theory and, to a large extent, in fact. By instituting a division of labor which separated command from government and military affairs from political ones, the state acted as the midwife of strategy. As commanders became increasingly professionalized, the first demand made on them was that they stay out of international politics and focus on military affairs exclusively; witness the fate of a French Revolutionary general, Honchard, who failed to read the new realities, opened negotiations with his opposite number on the Allied side in order to arrange the release of prisoners, and was shot for his pains. The equation also worked the other way around. From the sixteenth century on, the rise of modern states and the coalescence of their characteristic institutions is explicable largely in terms of the wars which they fought against each other. Thus, our present distinction between political and military power owes its

existence partly to strategy. Should strategy disappear, then probably so will this distinction.

If, at the upper end of the scale, it was the creation of the state which permitted strategy to become separated from politics, at the lower one a cardinal role was played by the development of weapons. So long as troops lived off, and indeed among, the populations by which they were surrounded the weapons which they employed against each other had to be sufficiently simple and sufficiently discriminating to be used against noncombatants also; as is shown by the fact that even today riot police whose job it is to wade into crowds are issued with shields, face-masks, nightsticks, and horses very similar to those of Roman legionares and medieval knights. Increasingly from about 1648 on, this situation ceased to apply. As artillery developed into the ultimate argument of kings--speaking with Louis XIV--it became too powerful, too expensive and too complex an instrument to be employed by anyone but state-run, regular armies. Conversely, the greater the power of artillery the less its usefulness in skirmishes, raids, ambushes, foraging, police operations, and so on.

Over time, the result was to draw an increasingly sharp dividing line between the kind of war in which major weapons were useful and that in which they were not. The former was designated war properly speaking, entrusted to regular units, controlled by general headquarters, and subjected to a newly invented system of rules known as strategy. The latter was known as "little war" (guerrilla), assigned to irregular troops under their own independent commanders, and governed by minor tactics.(45) Towards the end of the eighteenth century the first staff academies, whose purpose was to teach strategy, opened their doors in France and Prussia. As Tolstoy, speaking through the mouth of the German General Pfuhl, makes clear in War and Peace , the new breed of "strategists" turned up their noses on small scale warfare.

This was something they gladly left to half trained auxilliaries, bandits, and other louts.

Even as the development of crew-operated weapons caused "large" and "small" operations of war to become differentiated in the minds of men, the rise of strategy was favored by the appearance of a new form of organization, the corps d'armee . A French innovation which was subsequently copied by others, the typical corps of Napoleon's day numbered perhaps 25-30,000 men and possessed a permanent headquarters of its own. In Europe, it was also the first large formation since the Roman legions in which the three arms were combined; a construction which gave it the capablility of defending itself, unassisted, for a period of between 24 and 48 hours even against superior numbers. A network of officiers d'ordonance moving between them enabled the corps to operate at up to 50 kilometers away from General Headquarters, while at the same time taking part in the execution of a coordinated plan. The limitations hitherto imposed by the primitive means of communication were thereby overcome to a large extent. Once maneuvers on a strategic scale became technically possible, the distinction between them and tactics aquired its modern meaning. As Napoleon wrote when summing up the Ulm campaign, it was with the soldiers' legs and not with their muskets that the strategist went to work.(46)

Thus, the invention of strategy from the beginning presupposed heavily armed, large, distinct, independent bodies of troops including, besides the corps, the division, the army, and finally the army group. These formations were conceived as capable of coordinating their operations over large spaces, along lines of communication, and amongst every kind of obstacle; even to the point where the organization of such operations was just what Jomini had in mind when he wrote his famous textbook on the subject.(47) As strategy appeared, so did its characteristic terminology. The first important author

to consider the conduct of war in terms of theaters, bases, objectives, angles of approach, lines of communication, diverging and converging lines (corresponding to our distinction between internal and external ones), and so forth was Dietrich von Buelow. His System der neuere Kriegsfuehrung was published in 1800 and, in keeping with the spirit of the enlightenment, read almost as if it were a textbook on geometry complete with definitions, propostions, and proofs. Now almost forgotten, at the time it served as the opening shot for a flourishing debate on strategy, in many ways reminiscent of that which accompanied nuclear weapons from 1945 to 1990 and, ultimately, almost as futile.(48)

Towards the middle of the nineteenth century both the terminology of strategy and the logic on which it rested were greatly favored by the invention of those twin instruments, the railway and the telegraph. Whereas previously lines of communication had been somewhat nebulous concepts, now they took concrete shape in the form of steel track and wire, visible to anyone and easily traceable on the new "general staff" maps which were then coming into vogue. Whereas Napoleon had still been forced to ride all over the theater of operations, carrying out his own reconaissance and occasionally coming under fire, now for the first time it became possible for commanders in chief to closely supervise operations while sitting in their offices far in the rear. Whereas previously they had conducted their battles in person, now they displayed a growing tendency to focus on its preparation and its subsequent exploitation, leaving their subordinates to attend to the actual butchery. As a sign of the changing times, the traditional expression coup d'oeil --which presupposed a commander standing on some elevation and overlooking the battlefield--was abandoned. Its place was taken by our modern "estimate of the situation" (translated from the German Lagebeurteilung), implying a commander no longer able to see things with his own eyes.(49)

Also around the middle of the nineteenth century, the industrial revolution began making its effect on military logistics felt. Where previously by far the most important items consumed by armies had consisted of food and fodder, now advancing technology caused them to be replaced by ammunition, fuel, and spare parts. Whereas previously armies could move from one district to another while living on the countryside, the more technology developed the less feasible this became. As Liddell Hart wrote, nineteenth century armies were becoming tied to an "umbilical cord of supply". In the process, the old freedom of movement which, so long as they operated in populated districts, they had traditionally enjoyed tended to be lost. Already during Napoleon's time logistics had developed to the point where it became possible to defeat entire armies not by engaging them in a pitched battle but by surrounding them and cutting their etappes . From about 1850 on, the dependence of armies (and, en passant , of the new steam-driven navies) on bases, supplies, and lines of communications began to increase by leaps and bounds.(50) So, consequently, did their vulnerability to large scale "strategic" maneuvers aimed at severing those communications; which state of affairs was clearly demonstrated by the American Civil War and, immediately thereafter, the campaigns of Moltke who thereby acquired the reputation of being the world's foremost strategist.

The twentieth century was to see the intensification of these trends. The shift from personal weapons towards heavy crew-operated (later, motorized and mechanized) ones continued. Telegraphs were replaced by radio (at first this only applied to major formations), railways by fleets of wheeled and tracked motor vehicles. Though the details of strategy were modified, its essence was not. Since the most powerful modern weapons are designed to fight machines, not men, their effect was to make armies even more specialized for operating against each other; as a result, the time was to come when one army after

another made the discovery that they had become almost useless for the kind of "war without fronts" where the principles of strategy do not apply. Specifically, radio permitted instant communications from any point to any other, regardless of medium, distance, and movement. It acted as an aid to strategy of the Napoleonic kind, helping the latter to develop into the rapid-moving armored operations so characteristic of World War II and of what few large scale conventional conflicts have been fought since then.(51) Being more flexible than railways, motor vehicles in some ways increased the armies' mobility. However, by virtue of their own insatiable demands for fuel, spare parts, and maintenance they also increased the dependence of armies on their bases.(52)

Whatever the advantages and disadvantages of these and other twentieth century technological means, on the whole their effect was to increase range, speed, versatility, and the possibility of coordinating the operations of armed forces. Still, they did not restore the kind of logistic freedom of movement which those forces had enjoyed until about well into the eighteenth century--quite on the contrary. Likewise the rise of airpower gave commanders another means for directing large scale operations against vulnerable points deep in the enemy's rear. However, it did not alter the goals of strategy; in which respect little, if anything, changed between the time of Marengo in 1800 and Suez in 1973.

To sum up, modern conventional strategy, far from being self evident or eternal, is the product of specific historical circumstances which could be traced here in outline only. Essentially its growth was the result of two processes, one working from above and the other from below. Coming from above, strategy was made possible by a whole series of politico-legal developments; these tended to concentrate legal violence in the hands of a special institution, the state-owned regular army, as opposed to the

government on the one hand and the population on the other. Coming from below, various technological and organizational advances helped establish a relatively clear dividing line between fighting a battle and conducting a campaign. Even as technological and organizational developments helped armies to better coordinate their movements across large spaces, those very developments caused their dependence on lines of supply to increase. The combination of all these factors laid the foundation for what Jomini called les grandes operations de guerre and what we, following in his footsteps, call strategy.

Finally, the two processes--the one coming from above, the other from below--are linked. Just as it was the appearance of the state which led to the modern separation between political and military authority, so the only modern political organization capable of fielding large, regular armies and providing large, continuous spaces for them to maneuver in is the territorial state.

d. Conclusions

The purpose of this study is to understand what nuclear weapons have done, are doing, and will do to armed conflict, first in general and then in relation to certain regional powers. To this end, I considered it necessary to begin by presenting the outstanding characteristics of large scale, modern warfare before those weapons were introduced. This chapter has summed up those characteristics under three headings. First, modern warfare--meaning warfare as it has developed from the time of the Treaty of Westphalia on--has been waged overwhelmingly by the state, an organization so unique in history as to be almost synonymous with the modern age.(53) Second, the instrument which states have developed in order to wage war is the regular army, another

post-1648 institution with no precise equivalent in any previous age. Third, the method by which state-run armies wage large scale war on each other is known as strategy, here understood as a form of warfare which is specific to regular armies and conditioned, if not created, by a particular form of technology. Located between politics on the one hand and tactics on the other, military strategy owes its existence to a particular combination of mobility, control, and logistics. That combination is specific to strategy and, indeed, unique to it. Where no large scale, regular armed forces exist, neither does strategy.

Though the origins of the first two major constituents of modern war can already be seen in the century or so before 1648, the third one is clearly an eighteenth-century development. The three combined only reached maturity towards 1800, which explains why the term "strategy"--as well as the most famous works expounding its principles--dates from that period. Originally "modern" war was limited to those regions which had the state, in other words Europe, its extensions, and its colonies; the twentieth century has seen its expansion to other parts of the world, a process which was greatly accelerated when large numbers of new states were created after 1945. As non European societies adopted the state regular armies and strategy naturally followed, though actually the sequence in which the three elements emerged in each country separately was considerably more complicated. In the next two chapters we shall trace the effect of nuclear weapons on all three factors, starting with the superpowers and passing to regional countries.

Chapter II. Enter the Absolute Weapon

As World War II approached its climax in 1944, military history appeared to be firmly established on the course set for it during the previous three centuries. By far the most important players were states, operating either on their own or else in coalitions, most of them fairly loose.(1) The armed forces fielded by these states totalled some 45 million men, dwarfing anything in history before or--despite the growth of world population--since. To judge by the number of countries which had been conquered or were in the process of being reconquered, the only organizationss even remotely capable of withstanding these forces were others like them. The method by which these forces waged war consisted of strategy, i.e the coordinated movements of huge forces--air, land, and sea--directed, as far as possible, against their opponents' exposed rear. By the early summer of 1945 this type of strategy had brought Germany to its knees and was on the point of doing the same to Japan.(2) Then, coming literally out of the blue, nuclear weapons entered the arena and changed everything.

a. The Sturdy Child of Terror

As these words are being written in early 1991, the confrontation between the superpowers--indeed, possibly one or more of the superpowers themselves--is finished. Nobody any more worries about the possibility of nuclear war breaking out between them, and already one can foresee the day when our children will be wondering what the fuss was all about. In retrospect, such unconcern may be understandable, indeed inevitable; nevertheless, future historians who dismiss the Cold War as unnecessary and foolish will be doing an injustice to the people on both sides of the Iron Curtain who initiated

that War and conducted it for over forty years. This is because, by the logic of all previous history, the two superpowers seemed predestined to coming to blows and ought to have done so long ago. Power has always sought to reaffirm its own existence by clashing with power; after all, such had been the way of the world ever since the time when Sparta and Athens embarked on a thirty year war against each other to see who would dominate Greece. Indeed it is precisely because we assume this to be the way of the world that Thucydides, whose work serves as our principal source for that conflict, is still being studied by present day strategists.(3)

Consider the global order as it began to emerge at the Teheran Conference in late 1943, consolidated itself during the reamining year and a half of war, and was finally cemented at Yalta and Potsdam.(4) By 1945, at the latest, it was clear that the postwar world would be dominated by two powers, each of which was so unprecedentedly large and strong as to be called by an acronym and have the adjective "super" applied to it. The ideologies to which these two powers subscribed were vociferously, ferociously, opposed. As a result, one was explicitly committed to the destruction of its rival, an outcome which it regarded as "inevitable". The other, only slightly less radical, talked of "containing" the opponent and "rolling him back" if possible.(5) Though the phrases which they used were somewhat dissimilar, drawing on different political traditions, fundamentally each side called the other "an evil empire" over and over again and meant what it said. Had mutual hatred and paranoia alone been the sole causes of war, capable of overcoming everything else, then few countries in history would have represented more suitable candidates for slaughtering each other than the US and the USSR during much of the Cold War era.

Though each superpower was located in its own hemisphere--in the same way, incidentally, as Sparta and Athens were--points of friction between them were

by no means lacking. One, the USSR, was widely perceived as expansionist. Its aim was to extend its dominion, complete with its peculiarly hateful social system, over as many adjacent countries as possible and, in general, stir up trouble wherever it could.(6) In its effort to counter this, the US as the leading "free" country was prepared to go to great lenghts. It disregarded its own democratic and libertarian principles--the same which had caused it to break with its Allies after World War I--in order to offer support to the old, decaying, colonial powers. From Iran to Chile and from Nicaragua to the Philippines, some of the dictators who, professing to be anti communist, called themselves America's allies and received American aid were scarcely fit for human society. So strong was anti Soviet paranoia that the US did not shrink from concluding alliances with some of its own recently defeated enemies who also happened to be among history's worst scoundrels. From 1950 on, Germany and Japan were permitted to rebuild themselves on condition that they join the anti Soviet coalition; as a result, he who sups with the devil may yet find that he needs a long spoon.

Presenting another striking parallel with Athens and Sparta, the two powers were not symmetrical. By virtue of geographical circumstances, the USSR was predominantly a land power whereas the US made its military might felt primarily at sea. Had it not been for the introduction of nuclear weapons, both were secure from destruction at the hands of the other; though few people appeared to have thought so at the time. The US for decades was obsessed with the fear lest a Soviet offensive might one day roll over the northwestern European plain (that this was not just a preoccupation of a few policy makers is evident from its giving rise to a number of hysterical best sellers).(7) The result would be to bring another one of the major centers where industrial-military power could be generated within the Kremlin's orbit, thus leading to a fundamental change in the global balance of power. To

prevent it from taking place the US for the first time in its history entered peacetime alliances, committing its forces to the defense of foreign countries. Vast sums were invested, even to the point that the mightiest economy the world has ever seen is currently threatened with bankruptcy.(8)

Seen through Western eyes, the USSR appears to have had less cause for worry. Its land mass was considered unconquerable: after all, it was the British Fieldmarshal Montgomery who pronounced "don't march on Moscow" to be the first principle of war. However, the Soviets took a different view. Stalin himself on one occasion explained how social backwardness had caused the country to be invaded first by the Tatars, then by the Poles, then by the Swedes, and finally by the French. The generation which lost twenty million in dead alone to the German invasion was not likely to forget the way in which, as they saw it, the West had allowed and even encouraged Hitler to strike east;(9) nor were last-minute German attempts to surrender in the West while continuing the struggle against the USSR overlooked. As a result, they were forever expressing their fear lest German "revanchists", aided by American "monopoly capitalists", might one day try to destroy the revolutionary Soviet regime as indeed they had attempted to do in 1919-20. Repeating the claim, probably they came to believe in it, at any rate to the point of engaging in the largest military buildup in history and bankrupting themselves even more than the USA has done.(10)

As if external fears and friction were not enough, the vast armed forces fielded by each superpower against the other had their own momentum. If they did not actually push for war, as has sometimes been claimed, at any rate they did try hard to create a climate in which their political interests would be furthered, and their financial demands satisfied, by presenting each other in the starkest possible colors. According to Western analysts, Khruschev's attempt to pare down his country's armed forces played a role in his downfall

to the extent that, when the test came, he no longer enjoyed their support. Conversely, from 1965 on pressure brought to bear by the armed forces acted as one major reason behind the decision of the Soviet Union to embark on the largest and most sustained arms buildup in all history.(11) In the US, the phenomenon of the Military Industrial Complex, or MIC, was sufficiently important for a president (who was himself a general) to draw attention to it in his farewell address.(12) Historically, the role that such "militarist" pressures play in bringing about war is moot. All that can really be said is that, if ever armed forces stood to gain by presenting each other in the worst possible light, they were those of the superpowers during the Cold War era.

Finally, the fact that President Gorbachev has been awarded a Nobel Prize for helping bring about peace between the superpowers should not make us forget that, during at least part of the period since 1945, one and possibly both of those superpowers were ruled by men whose sense of responsibility and even mental stability were in doubt. The USSR until 1953 was governed by Joseph Vissarionovich Stalin. Even compared with the already considerable achievements of his contemporary, Adolf Hitler, as a mass murderer he was second to none, and the older he grew the more paranoid he became.(13) Stalin's successor, Nikita Khruschev, was able to assert himself only after a power struggle which probably involved at least one murder (that of NKVD boss Laurenty Beria). He was a man whom many regarded as an uncouth, missile rattling, buffoon from the boondoggles, and who surrounded himself by a personality cult. His own memoirs show him sitting with Mao at the poolside in Beijing, discussing nuclear weapons in kindergarten terms.(14)

Compared with the terrible and forbidding men who, at times, occupied the Kremlin America's leaders during this period were models of sweetness and light. Still, the effort to present presidents as if all of them were reasonable men who would never willingly expose their country to the risk of

all out war against the other superpower(15) is not altogether convincing. At least one, John F. Kennedy, is perhaps best understood as a power crazed personality barely past adolescence. By one account he was prepared to risk the continued existence of the world during the 1962 Cuban Missile Crisis merely to prove that he was more than a match for Khruschev, who after all was the older and more experienced statesman.(16) Much has also been written about president Nixon during the final Watergate days. At that time, such was his state of mind that secretary of defense James Schlesinger was rumored to have gone counter to the constitution, issuing secret instructions that any order coming from Nixon to activate nuclear weapons should first be cleared with him. Looking at both sides of the Iron Curtain, there is little likelihood, and certainly less proof, that the statesmen who had their fingers on the nuclear trigger since 1945 were more, or less, reasonable than their predecessors.

Into this explosive mixture of clashing ideologies, conflicting interests, assymetrical power, internal pressures, and unstable personalities nuclear weapons were thrown, first by one superpower and then by the other. Forty years of peace have familiarized us with the power of these weapons, their horrible implications, and the fact that there is practically no defense. Hence it is easy to identify them as perhaps the most important reason why history was confounded and no Third World War took place; however, to say that this was clear from the beginning is to attribute to the previous generation a degree of wisdom which they did not and could not possess. Before 1945, even the idea that nuclear weapons were technically possible had been limited, in the main, to a handful of physicists and science fiction writers. Though there had never been a lack of imaginary tales of omnipotent weapons, nothing in history had prepared people for the day they would actually appear upon the scene. This applied to leaders no less than to their followers. As Vice

President of the United States, Harry Truman had been aware of the Manhattan Project's existence but not of what it was all about. Upon being introduced to the bomb, all he could do was to mutter that "this is the greatest thing in the world".(17)

As it was, a few far sighted individuals recognized the full significance of the bomb almost from the beginning.(18) However, most military officers were reluctant to do so even after the first ones had been dropped. After all, if America's defenses were to be built exclusively around nuclear weapons then a drastic curtailment of the armed forces would logically follow. Should deterrence take the place of warfighting as official doctrine, then in the long run the outcome might be to put their whole modus operandi , even their raison d'etre , into question. If only for this reason, most of the senior commanders to whom Western politicians turned for advice during the late forties were on the side of caution. They preferred to present "atomic" weapons as unprecedentedly powerful, but not revolutionary, devices.(19) On the whole, this view was shared by the scientific advisers who formed the other leg of the emerging military indsutrial complex. While stressing that atomic warfare would be enormously destructive, most of them thought that it would still be waged more or less as before; give or take a few cities turned into smoking, radiating ruins.(20)

Bureaucratic politics apart, there were reasons for this optimism, if indeed optimism is the right word. Until about 1950 nuclear weapons were relatively few in number and, therefore, too precious to be dropped on any but the largest demographic and industrial targets.(21) Owing to their weight and size they could only be carried by specially modified heavy bombers. Given the distances that these machines would have to travel on their way to targets deep inside the USSR, it was reasonable to assume that attrition rates would be considerable and that a substantial part of the attacking force would be

shot down. As a result, although the US enjoyed a nuclear monopoly, neither side necessarily regarded that monopoly as decisive and, therefore, as capable of preventing war. The Americans assumed that, should war break out, then the armored, mechanized forces which constituted the Red Army's main strength would still be able to launch a short Blitzkrieg style campaign aimed at overrunning Western Europe.(22) The Soviets on their side developed the theory of the "five permanently operating factors". This was a doctrine specifically designed to convince themselves that being subjected to nuclear bombardment would not necessarily mean the end of the world; and that, accordingly, the USSR would still be able to win even if subjected to such a bombardment.(23)

Towards the mid fifties, this situation changed. Both sides now had nuclear weapons--not just of the fission type, but fusion devices as well. On one side at least they were becoming sufficiently plentiful and sufficiently miniaturized to be used against targets other than large cities. Though the Soviet strategic arsenal was growing, until 1966-7 American superiority was never in doubt. This was a period when the Strategic Air Command (SAC) was at its peak. From Europe through North Africa and Asia all the way to the Pacific, the Soviet land mass was surrounded by American bases. At any one time, hundreds upon hundreds of long- and medium range B-36, B-47, and B-52 bombers far outnumbered a much smaller and technically less sophisticated Soviet bomber force. Beginning in 1960 nuclear submarines carrrying the first Polaris missiles joined the arsenal, a development which it took the Soviet Union almost a decade to match. By the time the first Soviet SLBM's became operational Polaris was already on the verge of being replaced by the Poseidon system, capable of carrying three independent reentry vehicles to a considerably greater range.

Admittedly, the Soviets were the first to put a satelite into space.

Nevertheless, when President Kennedy entered office in January 1961 the missile gap on which much of his election campaign had been built was already recognized as a myth. At that time the Soviets were still limited to a handful of liquid fueled, hence cumbersome, slow to launch, and unreliable, first generation missile. The US, by contrast, had already passed this stage and was beginning to deploy solid fueled Minutemen in hundreds of silos. In the number of operational ICBMs the US led the way by a large margin, peaking in an advantage of four or five to one which it possessed during the early sixties. As a result, this was the time when the USSR was at its most vulnerable to an American first strike.(24)

Such extreme assymetries notwithstanding, nuclar war did not break out in this period any more than it had during the previous one. By the account of one who played a key role in the Cuban Missile Crisis--the most dangerous one by far--it was never even close to breaking out.(25) On the contrary, superiority led America to adopt a doctrine known as Mutual Assured Destruction, or MAD, which was specifically designed to make sure that nuclear war should never break out. The doctrine hinged on the belief--mistaken, in retrospect--that the two sides were roughly equal in power, yet paradoxically as soon as the Soviet strategic arsenal did begin to draw level with the US the doctrine was abandoned. The change was partly a response to growing Soviet conventional power, partly an outgrowth of new technological developments such as computerized guidance, Multiple Independent Reentry Vehicles, and cruise missiles.(26)

Since none of these highly destabilizing technologies became available to the Kremlin until the second half of the seventies, the US was able to develop a whole series of hair-raising doctrines for employing nuclear weapons in ways which would not bring about the end of the world, at any rate not automatically.(27) There was talk of "surgical strikes" and "limited nuclear

options", both of which meant blowing up a military installation here, a small city there. Small, accurate, nuclear weapons might be employed to deliver "shots across the bow" or, in another scenario, "decapitate" the Soviet Union by sending a warhead through Mr. Brezhnev's own window. Again, however, all this remained in the realm of phantasy. Both sides took very good care to make sure that no nuclear warhead was fired in anger, and looking back it is difficult to imagine circumstances under which this might have happened.

As one form of assymetry was replaced by another and American nuclear doctrines shifted from second strike deterrence to limited first strikes, the Soviet Union was anything but quiescent. Its top brass my have been less fertile in inventing "strategies" or, at any rate, publishing those which they did invent; however, once nuclear weapons and delivery vehicles became relatively plentiful during the late fifties they never tired of emphasizing that, if war broke out, it would immediately become both nuclear and total.(28) Khruschev himself was capable of extremely provocative behavior, rattling his missiles (which, it later turned out, he did not possess) first in connection with the 1956 Suez Crisis and then, repeatedly, in order to try and force concessions over Berlin.(29) Possibly because they had the Cuban Missile Crisis to think about, his successors were less inclined to make threats. However, no sooner had they come to power than they embarked on a formidable buildup of the Soviet strategic arsenal.(30) By the seventies, that aresenal had reached the point where it first equalled and then overshadowed--by most measures--the one fielded on the other side of the Arctic. Important parts of it, such as the MIRVed SS-18 and SS-20 missiles, appeared as if they had been specifically designed for a first strike against the US and its allies. As a result, many strategic experts began to the possibility of such a strike seriously for the first time.(31)

These were the years when, following the departure of Dr. Kissinger and

the subsequent demise of detente, the so called "Second Cold War" was at its height. Particularly between 1975 and 1979, scarcely six months seemed to pass without the Soviets scoring some significant strategic gain: be it in Indochina (1975), Angola (1976), Ethiopia (1978), Iran (1979, though this was scarcely the result of Soviet machinations), Afghanistan (1979), and any number of other places. At the time when the apparent Soviet drive for world dominion was gathering momentum, the US was led by a president whom many saw as a well intentioned weakling at best and a bigoted fool at worst. There was much loose talk of the decline of the West, attributable to a failure of will, the dear prices of oil, or both. Again, hindsight allows us to say that, even in the face of such supposed assymetry, a nuclear war was not on the cards. However, at the time it was taken sufficiently seriously for the US to embark on its "Star Wars" program which was designed to render the other side's missiles "impotent and obsolete". Had the program been pushed with anything like the vigor intended by its original proponents, it would have brought about the bankruptcy of the American economy even faster than was actually the case. In the event, the coming to power in the Soviet Union of Mikhail Gorbachev revolutionized the entire situation. By 1990, and whatever its rhetorical flourishes in the past, the USSR also suscribed to the view that nuclear weapons existed for deterrence only.(32) The arms race ended in a whimper rather than a bang.

To sum up, the fact that the superpowers have finally reached the peace of exhaustion should not cause us to forget that, for the best part of forty five years, those same superpowers were like two express trains set on a collision course. To identify the nuclear balance as the main factor which prevented that collision from taking place is not difficult; yet to see that balance as symmetrical, let alone assured, at all times requires a considerable amount of hindsight. At first, nuclear war itself did not appear particularly horrible

or impossible. Later on, scarcely a year passed without some quantitative or qualitative development causing the balance of terror to be called "delicate" or "shifting". The Bomber Gap, the Missile Gap, the Anti Ballistic Missile Controversy, and so on all the way to the so called "Window of Vulnerability", succeeded each other. Each time it was feared that the Soviets were on their way to gaining some terrible advantage. Each time vast sums of money were spent to ensure that such an advantage would not tempt the Soviet leadership to attack or, at the very least, exploit its "escalation dominance" to extract some far reaching politico-strategic concessions. Nor did the picture look so different from the Soviet point of view. American economic preponderance apart, from the original bomb to SDI at any one moment the technological advantage was usually on the side of the US. Hence the Soviets found themselves forever condemned to catching up. Even if they did catch up, there was no knowing what their rich, ingenious, and (some would say) unstable opponents might come up with next.(32)

Adding to this built-in instability, during some fifteen years after Hiroshima procedures for safeguarding nuclear weapons and preventing them from being activated by accident remained primitive, to say the least. Before the advent of Permissive Action Links (PAL), satelite surveillance, over the horizon radar, and hot lines, a potential existed for unauthorized or accidental war which appears hair-raising in retrospect.(33) Even after their advent, the fact that only thirty minutes would be available from the time a missile was fired to the moment of impact had horrifying implications for the world's continued existece. All these developments took place against the background of irresponsible, sometimes even terrifying personalities; intense internal pressures; assymetrical, constantly shifting, military capabilities; numerous conflicting interests spread all over a complicated world; and sharply clashing ideologies. The resulting witches' brew was as explosive as

any in history. International relations seemed like a roller coaster carriage out of control, producing local crises without number that were often accompanied by spectacular fireworks. Still, none of these crises led to "central" war or, by some accounts, even got close to leading to such a war. While MAD as a doctrine dates to the early sixties, as a reality it existed much earlier. Though as a doctrine it could be criticized for its shortcomings and officially abandoned, as a situation actually prevailing it was much harder to get out of and survived the countless attempts to upset it. In the end, peace between the superpowers turned out to be the sturdy child of terror.

b. The Death of Limited War

As the advent of nuclear weapons failed to bring about nuclear war between the superpowers--the first time in history, surely, when such powerful weapons were left unused for such a long time--the remaining forms of armed conflict in which they could engage also became more and more restricted. This outcome was not understood at the outset. By the time it began to be understood, it led to the abrupt dismissal of at least one general whom many regarded as among the twentieth century' greatest but who stubbornly refused to see the new light. An intellectual crisis ensued. Strategists in government and academia engaged on a frantic search for new forms of war which, so it was hoped, could still be fought in the presence of nuclear weapons. In the end, those hopes were destined to be disappointed. However, by the time they had been disappointed both superpowers had suffered stinging military defeats and found themselves well on the way to rendering their armed forces impotent if not altogether obsolete.

We today live in a world where, for decades on end, even those who have

never read Clausewitz (the great majority) are familiar with his dictum that war is the continuation of policy by other means.(35) Now previous generations were by no means behindhand in their appreciation of Clausewitz; however, their reading of him differed from our own. To them, it seemed that his most important message was not that war is an instrument of state policy--which most people took more or less for granted--but the need to use force to the utmost, ruthlessly and without limit.(36) However, by the mid fifties at the latest it had become clear that, in the age of thermonuclear weapons, the maximum use of force against an equal enemy was tantamount to suicide; to this extent, it was not just war's conduct but its nature which was altered by those weapons. Most historical experience, including not least the recent experience of two twentieth century total wars, was thereby rendered irrelevant.(37) In the future, it would be possible to wage war only to the extent that it was closely controlled by policy and only to the extent that it was limited.

In the US, attempts to make the world safe for nuclear war by imposing limits on it started around 1955. By this time the Soviet Union had exploded a hydrogen bomb and both sides' thermonuclear arsenals were rapidly growing. The doctrine of "massive retaliation"--which proposed to rely on first use of these weapons--appeared less and less credible, given that it implied a willigness to sacrifice Washington and New York in order to save Hamburg and Munich. Accordingly, some American strategists proposed that the superpowers sign an agreement not to use bombs with a yield greater than 150, or 500, or whatever, kilotons (quite sufficient to destroy any target, considering that Hiroshima and Nagassaki had been devastated by bombs developing 14 and 20 kilotons respectively). Another bright idea was that they should agree to use them only against selected targets, such as military forces, bases, or installations.(38) In retrospect, we can see that the attempt to safeguard

theater warfare by "decoupling" it from a strategic nuclear exchange was doomed to failure. After all, a prospective agreement to avoid the most important targets and leave the most important weapons unemployed begged the question as to why belligerents who could reach such an agreement should go to war at all; especially one that threatened to terminate the existence of both.(39)

Also during these years, nuclear weapons were becoming plentiful, easy to deliver, and cheap. The slow flying, difficult to maneuver, heavy bombers which, initially, had been the only vehicles capable of dropping the bombs on their targets were being supplemented by other systems: including fighter bombers (e.g the Air Forces' Thunderchief and the Navy's Crusader), medium and short range missiles (the Army's Redstone, Corporal, and Honest John), atomic artillery (the 280 mm. gun), and even an atomic bazooka (the Davy Crocket).(40) Whereas previously delivery vehicles had been comparatively few in number and difficult to hide, now they became mobile and easily concealable. Whereas previously it was thought that nuclear weapons would be used only against large industrial-demographic centers deep in the rear, these technical advances appeared to make their employment in combat possible: for example, in order to destroy the opponent's logistic bases, blast a gap through his defenses or, on the contrary, prevent him from following up a local breakthrough.(41) As a result, it became important to consider ways and means by which conventional forces could operate in a nuclear environment and still survive, let alone retain their combat power and accomplish something useful.

In the US at any rate, the introduction of "tactical" nukes during led directly to the so-called "pentomic era".(42) Traditional divisions, consisting of three brigades or regiments, were carved up into five smaller and hopefully more mobile units. These units were supposed to be linked by

the small, transistorized communications that were coming into service just then, permitting them to operate in a decentralized, dispersed mode unlike any previous one in history. They were to wage regular warfare at one momment, irregular combat in the next. Leaping from one place to another to avoid the nuclear warheads aimed at them, they would open and close like some huge accordions. To operate in this way they would require novel types of equipment, beginning with giant cross-country landwalking machines and ending with flying jeeps; some visionaries even painted pictures of tanks with detachable, rocket-powered turrets jumping into the air and shooting at each other.

Since the internal combustion engine was perceived as too inefficient and too demanding to do the job, a substitute had to be developed.(43) Since ordinary lines of communication would presumably be blocked, one scenario envisaged supplies being delivered by cargo-carrying guided missiles dropping in from the stratosphere and sticking their noses into the earth like enormous darts. The manpower system, too, was to adapt itself to the new environment. As one Army physician wrote the "bugaboo of radiation" had to be exorcised.(44) The troops taught to ignore its effects were to be divided into "radiation classes" according to the doze they had received; depending on the time they could expect to live, each class could then be sent on its appropriate mission. One article in Military Review entitled "Atomic Impact on G-1's [personnel] Functions" proposed that the Army's grave registration service be greatly extended. In retrospect, this may have been the most useful proposal of all.(45)

To prove that its troops were indeed capable of surviving and operating on the nuclear battlefield, the US Army carried out a series of field tests. In the most important one, the well publicized operation Desert Rock VI, an armored force, minus its soft vehicles, was put into administrative posture

and dispersed at a safe distance from the planned site. The turrets were turned away, the troops buttoned up inside their vehicles; eight minutes after the 30 kiloton explosion had taken place they emerged and drove towards it, though still carefully avoiding ground zero itself.(46) According to the best available information, the Soviets in 1954 held a similar test in which numerous Red Army troops were killed. This seems to have taught them a lesson, since thereafter Red Army "nuclear" exercises were apparently confined to igniting masses of ordinary fuel and gingerlly driving around them.(47) Thirty years later, the American tests were still being remembered owing to the increase in the cancer rate among the participating troops which they had caused. However, they did not offer convincing proof that conventional forces could survive, let alone fight, under nuclear conditions; nor, truth to say, is it easy to imagine a way in which such an experiment could have been designed.

The dilemma facing the planners was, in retrospect, a simple one. If conventional forces survive a nuclear war they would have to disperse and hide. If hide and disperse they did--discarding much of their heavy equipment in the process--they would be unable to wage conventional war or, should things be taken to extremes, any war at all. Thus the effect of tactical nuclear weapons was to threaten the continued existence of conventional armed forces and, especially, ground ones. Yet if fighting was to take place at all, the only forces which could engage in it without threatening to blow up the world were conventional ones. It was left to the Kennedy Administration, guided by Secretary of Defense Robert McNamara and Chief of the Joint General Staffs General Maxwell Taylor, to try and square the circle. Their solution, if that is indeed the word to use, consisted of plunging all out for conventional war, nuclear weapons be damned. A new strategic doctrine, known as "flexible response" articulated this approach and was officially adopted by

NATO in 1967. Henceforward preparations for conventional war in Europe and elsewhere were to proceed _as if_ the threat of nuclear escalation did not exist.(48)

The purpose of flexible response, namely safeguarding the continued existence of conventional forces, was achieved. Year after year NATO forces stationed in West Germany went on their maneuvers, carefully trying to prevent damaging civilian property whose owners would have to be compensated later on. The catch was that, given the alleged Soviet superiority in conventional forces (and the West German refusal to fortify their borders), most Western analysts believed a determined Soviet attack could only be stopped by using "tactical" nuclear weapons. As early as 1955, a series of wargames played on behalf of the Supreme Allied Commander, Europe (SACEUR) had shown that nuclear weapons would cause so much devastation in West Germany that there would be little left to defend.(49) Nevertheless NATO--but particularly the Americans who, after all, were preparing to fight on other people's soil--forged ahead. Thus it came to pass that, given the inability to prepare for both nuclear and conventional war, for two decades after 1967 much of the Western effort aimed at preparing a defense against the USSR amounted to a gigantic exercise in make-believe.

Even as successive attempts to restrict war in the "central theater" in such a way as to enable it to be fought ended in failure, strategists turned their attention elsewhere. Their starting point was the Korean War. What made Korea so remarkable--if only in retrospect--was the fact that both sides observed some limits _vis a vis_ each other. Neither, though for different reasons, attempted to escalate the war beyond the Korean Peninsula. Neither launched air attacks on the other's strategic bases, and the Americans at any rate also refrained from using every kind of (nuclear) weapon.(50) In part because they observed these limits, neither side was able to achieve victory.

As a result, the three years' butchery ended in an almost perfect draw. The lesson was not lost. Given that the shadow of nuclear weapons was always present, it was argued that all future wars would have to be carefully circumscribed if they were to be fought at all. To prevent escalation one or both sides would have to draw certain lines, signal willingness to respect those lines to the opponent, and rest content with something short of total victory.(51)

In the event, Korea was to destined to be remembered, not as the model of future conflict between the superpowers but as the first out of two conventional wars ever fought by either of them in the nuclear age. This was in part because the very factors which permitted it to take place--namely, the strategic unimportance of the peninsula (which the American Joint Chiefs of Staff clearly recognized even at the time) and the limitations placed on victory--also made it somewhat pointless. A phenomenon of downward escalation set in. After Korea, to avoid even the slightest risk of a war getting out of hand and turning nuclear each opponent whom the Americans confronted had to be progressively smaller, less important, and more isolated than the last. Being isolated, unimportant, and small, most of the time the "opponents" in question did not have a modern industrial infrastructure and were incapable of waging large scale conventional war. Worse still, the smaller an opponent the more difficult it became to explain to the American public why he had to be fought at all; particularly if the war lasted for any time, and particularly if it involved casualties.

The largest of the unimportant wars was staged in Vietnam. It was fought not against a modern army, let alone an organized state in the Western sense of that word. During most of the time and to an overwhelming extent, the opponents were ant-like guerrillas (whether regular or not) clad in black piyamas and wearing pieces of old tires for shoes.(52) Even so, fear of

escalation in the form of Chinese intervention hung heavily over the conflict. Johnson and McNamara, assisted by ambassador Taylor in Saigon, were going to make very sure that the Korean experience did not repeat itself.(53) The air was where America's military advantage was at its most overwhelming. For that very reason, it was never put under Westmoreland's control and subjected to the most stringent restrictions. Limits were drawn and some of the most important targets declared out of bounds, even to the point where Washington insisted on approving each one separately before allowing it to be be bombed.(54)

After it was all over, the "lesson" most people drew from Vietnam was that, if victory was to be achieved even against a third rate opponent in some totally unimportant place, overwhelming force would have to be used. However, the use of overwhelming force represented just the factor most conducive to escalation--possibly even nuclear escalation, given that the number of countries which had such weapons or were capable of building them was growing all the time. The outcome of this paradox was to leave fewer and fewer places around the world where large scale armed force could still be used at all. The only opponents left were fourth rate, until finally the time came where it became difficult to speak of any opponents at all. In places such as Grenada and Panama, so grossly missmatched were the forces on both sides that the "wars" they fought took on a comic opera character. Incidentally, one result of this situation was that the forces could do nothing right. As they "fought" the weak they were damned if they did and damned if they did not, drawing critical fire for being too cautious in the one case and for using excessive force in the other.(55)

As of the early summer of 1990, the Cold War had clearly come to an end. In the absence of a worthwhile opponent, the future of America's conventional armed forces appeared increasingly in doubt and plans were being drawn up to

cut them by one quarter to one third. Thousands of American officers were already preparing to doff their uniform and go home when Iraq invaded Kuwait: Iraq being the only country in the world which, while it did field very respectable conventional forces, was yet (or rather, as yet) incapable of building nuclear weapons. Thus perceived, Saddam Hussein presented a target too good to miss and it was quickly seized. As the world watched on TV, the United States and its allies mounted a spectacular fireworks display, using the opportunity to rid themselves of surplus military resources that were going to be scrapped anyway. Once victory had been achieved and order restored, plans for reducing the armed forces could go ahead as scheduled--or so it was hoped.

Though the route taken by the Soviet Union towards military impotence differed from that of the US, the ultimate outcome was just the same. During the early years of the Cold War, the Soviet approach to war was determined by two cardinal factors. First, geographical circumstances dictated that, in this case, the most important strategic interests should be located in areas contiguous to the Soviet homeland and close to its borders. Second, the Soviet Union during these years found itself in a position of nuclear inferiority; given that the US had already showed its readiness to employ nuclear weapons even at a time when no overwhelming need existed, clearly not a position with which the Kremlin could comfortably live. Unable to match American power, the Soviets were compelled to resort to bluster. This already became evident at Potsdam when Stalin, upon being told of the bomb's existence by President Truman, merely remarked that he hoped it would soon be used against Japan.(56) As we saw, Soviet military doctrine for almost a decade thereafter continued to downplay the importance of nuclear weapons. Instead it emphasized "the five permanently operating factors" supported by the vast conventional forces which Stalin kept in being.

After the dictator's death, this posture changed. Though the Soviets now possessed their own nuclear arsenal, apparently the feeling of being only second best was never far away.(57) Insofar as America's nuclear forces for many years exceeded that of the Soviet Union by a large margin, that feeling was justified. Strategic inferiority was one cardinal factor which compelled the Soviet Union to develop a military doctrine directly opposed to American ideas of "limited war". Whereas limited war by definition could be waged only in some faraway theater--the less important, the better--the Soviets prepared to fight on the borders of their East European empire. Whereas the US was forever looking for ways to make the defense of West Europe credible by "decoupling" it from a "strategic" nuclear exchange, the Soviets never got tired of repeating that any war would quickly escalate.(58) To emphasize the point, they reportedly integrated nuclear weapons into their order of battle and went on to develop a military doctrine which hinged about an all-out "offensive in depth".(59) Only during a brief period in the eighties, when it appeared as if the "central" balance had shifted in their favor, did they display any kind of interest in the possibility that a conventional war in Europe might be fought for some time without turning nuclear almost at once.(60)

For all its occasionally bellicose rhetoric, when it came to actually using its military power the USSR was even more cautious than the US. To them, too, the central front was effectively closed, a situation cemented into the Berlin Wall of 1961 but existing much earlier. Hence, for three decades after 1945 the only countries which felt the direct impact of Soviet military power were its own satelites and supposed allies: East Germany, Hungary, and Czechoslovakia were each in turn "saved" from themselves and from wicked Western machinations, and in 1981 it almost looked as if Poland might share a similar fate. These operations apart, the Soviets sent advisers and equipment

to many places around the world including Asia, Africa, and--on a much smaller scale--Central America. Out of several dozen Soviet military adventures of this kind, much the largest single one consisted of the sending of 20,000 or so personnel to Egypt. Between 1969 and 1972, they helped train the Egyptian Army, manned the anti aircraft defense system, and flew a few combat sorties which promtply ended after a clash with the Israeli Air Force brought home the dangers of escalation.(61) If only because they did not develop an ocean going Navy before the seventies, on the whole Soviet armed enterprises were more limited than those of the US. From Angola in 1976 (when their Navy provided cover for the Cubans) to Ethiopia in 1978 (when they drove out the Somalis but failed to bring peace), they tended to take place in regions very far removed from the center of Soviet power. Too, they involved the Red Army in little or no fighting.

While American self confidence reached nadir during the years following Vietnam, the Soviet Union's military-political power peaked. Its conventional forces had always been formidable, but now the steady deployment of MIRVed missiles (the SS 18 and, in Europe, the SS 20) had closed or reversed the gap in strategic forces also. These developments seem to have caused the normally cautious men in the Kremlin to feel that they, too, could afford to fight a nice, limited war in order to achieve nice, limited aims. The place they selected was Afghanistan, a country comfortably close to their own borders and regarded by them as part of their own region of influence. Having received Soviet assistance for years,(62) Afghanistan had no tight links with any other power. It was a weak state surrounded by other weak states which would not dare to intervene; finally, the only Afghanistani armed forces worth mentioning were those which the Soviets themselves had helped build, or so they thought. For all these reasons an easy victory seemed assured and the danger of escalation, including in particular nuclear escalation, exceedingly

remote.(63)

As also happened during the American entry into Vietnam, these calculations were vindicated and the early stages of the invasion went like clockwork. Driving down the mountain passes, the superbly equipped armed Red Army divisions overran the country, occupied its capital against little or no opposition, and installed a government of the Kremlin's choice. However, the war soon turned sour. In the face of everything that the Soviets could do--including, it was rumored at the time, the use of gas warfare--a nasty guerrilla campaign asserted itself and spread. For nine years the Soviets floundered about. Piling victory upon victory, they were yet unable to defeat their opponents and took heavy losses in the process. When they finally retreated, it was to the accompaniement of jeers by bare-feeted mujahideen who did not even bother to shoot at them. Not long after they retreated it became clear that the largest military power the world has ever seen was left practically without armed forces capable of waging war and enforcing its will abroad.(64)

To sum up, the superpowers' military history during the period since 1945 is very largely the story of attempts to find "limited" ways in which their armed forces might still be used, the alternative being those forces' eclipse. By virtue of its geography and its colonial legacy, most such attempts were made by the West. The search for ways in which war might be waged without, hopefully, blowing up the world went on for several decades. Looking back, it is possible to divide the attempts into three kinds. First, those which sought to bring about agreement between the superpowrs proved totally unrealistic; such an agreement ran directly counter to Soviet military doctrine, with the result that no treaty for limiting the size of nuclear warheads to be used in war or the targets against which they might be used has even been discussed. Second, the quest for ways to fight a conventional war

in the "central" theater also led to failure, ending in the adoption of "flexible response" as a gigantic exercise in make believe. Third, what limited wars were fought outside the "central" theater either led to the conclusion that military power could accomplish nothing or that the things which it could accomplish were scarcely worth having.

On the other side of the hill, the Soviets were even more cautious. For many years the principal beneficiaries of their military power were their own protegees in Eastern Europe, whereas others experienced that power mainly in the form of advisers or equipment. Not being put to a serious test, the Soviets were able to disguise the uselessness of their conventional armed forces for somewhat longer than the US. However, when they finally did attempt to fight a limited war they were taught a hard lesson not dissimilar from the one learnt by the US a decade or so earlier and one whose full political, social, and economic effects are only now beginning to reveal themselves. As compared to the expansionist designs that were still being attributed to them between 1980 and 1985,(65) the recent Soviet withdrawal from world affairs can only be called astonishing. The Kremlin has learnt that, in the nuclear age, what could still be achieved by conventional armed forces was not worth fighting for and what was worth fighting for could no longer be achieved. May thou rest in peace, limited war.

c. The Transformation of Strategy

From Jomini to Liddell Hart, the original meaning of strategy was simply the body of rules governing large scale warfare (other than the actual fighting) between large scale armed forces. Now that nuclear weapons brought about a situation where large scale warfare between the most important forces by far--those of the superpowers--was no longer practical, its meaning changed.

A splintering process took place: whereas previous generations had only known strategy _tout court_ (except, perhaps, for "naval" strategy) the postwar world saw the blossoming of nuclear strategy, conventional strategy, grand strategy, theater strategy, economic strategy, and other types of strategy too numerous to mention. Here I shall discuss some of the meanings which strategy, in the absence of large scale fighting, has assumed. Having done so, we can then turn our attention to regional powers and see whether the same process has overtaken them.

As might be expected, the most fundamental split which took place after 1945 was the one between nuclear and conventional strategy. Nuclear strategy represented an entirely new field, though most people took time to realize how new it really was. The relationship between the two fields was most problematic and, indeed, itself constituted perhaps _the_ most important issue facing "strategic studies". This was because, as compared with the towering threat presented by nuclear weapons and nuclear war, conventional weapons and conventional war appeared so puny as to be scarcely worth mentioning. Conversely, conventional war could be waged only to the extent that it could be "decoupled" from nuclear weapons and the threat of escalation avoided. Though rivers of ink have been spilt in an attempt to show how this could be done, todate nobody has been able to _guarantee_ that a conventional war between nuclear-armed countries would not quickly run out of hand. Hence, conventional strategy remained possible only to the extent that danger was ignored.

Operating within this constraint, conventional strategy remained much as it had always been, namely a question of large units using time and space in order to maneuver against each other. Every time a new weapon system appeared, or a war was fought anywhere around the world, rivers of ink were spilt to discuss their "strategic" implications. By and large each such

weapon was supposed to be more mobile, powerful, and far ranging than its predecessor. If only because increases in range, power and mobility were necessary to justify the enormous expenditure involved, most experts agreed that modern operations would progress faster, unfold in greater depth, and be more destructive than their precdecessors.(66) Beyond this general consensus, opinion varied. In particular, the 1973 Arab-Israeli War gave questions such as offense versus defense, mobile versus stationary defense, concentration versus dispersion, and so on which had been the staple of strategy since at least 1918 a new lease on life.(67)

The reason why conventional strategy underwent so little change was, of course, that the forces by which it was supposed to be waged--land, air, and sea--were all taken straight out of World War II. For forty five years successive generations of tanks, armored fighting vehicles, artillery tubes, aircraft, helicopters, ships and submarines replaced each other. Looking back, however, there was little fundamental development and less revolutionary change. In particular, the vaunted "missile age" never really got off the ground. This was because, although missiles did supplement aircraft and artillery to some extent, for various reasons their impact was more limited than originally thought. Already the Germans during World War II discovered that surface to surface missiles designed for medium range work (say, 50 to 300 miles) were too inaccurate, and too expensive in relation to the size of the warheads they could carry, to bring about a strategic decision. At the other end of the scale, short range anti tank, anti aircraft, and air to surface missiles either countered existing weapons or enhanced their capabilities. Most armies envisaged using vastly increased firepower to supress the missiles and disrupt their operators' aim. The end result was to render the battlefield much more complicated. However, it did not bring about fundamental change in the conduct, let alone the meaning, of strategy.(68)

Missiles apart, the most important advances consisted of electronic circuitry incorporated into weapon systems in order to improve target acquisition, tracking, and aiming capabilities. Particularly after 1970, electronics became almost synonymous with modernity and accounted for a growing proportion of the costs of new systems; however, since the gadgets fielded by each side were often neutralized by that of the other, when everything was said and done tanks remained tanks, aircraft aircraft, and ships ships. A historical survey of post 1945 wars will support this claim. Korea was fought largely with arms left over from World War II. If the 1967 Arab Israeli War bore an uncanny resemblance to some late World War II Blitzkrieg, this was partly because some of the weapons fielded by both sides had participated in the last Soviet and American Blitzkriegs of that era.(69) The massive tank battles of the 1973 Arab-Israeli War bore a strong likeness to Alamein and Kursk;(70) whereas the conflict fought by Iran and Iraq from 1980 until 1988 remsembled World War I much more closely than it did anything in Star Wars .

As successive generations of weapons systems, each much more sophisticated than the last, were introduced strategic thought froze. Even during the eighties, Blitzkrieg--originally conceived fifty to sixty years before by the likes of Guderian, Fuller, and Liddell Hart--was still described as the highest a conventional force could achieve; conversely, all NATO could think of was how to defend itself against an eventual Soviet super Blitzkrieg.(71) There was much talk of new doctrines with such esoteric names as Airland Battle, FOFA (Follow on Forces Attack), etc.. Each was presented with great fanfare as if they constituted some original departure, yet at bottom each was merely a variation on the fighter-bomber cum tank combination first tested by the Germans during the Spanish Civil War. Given the fact that the 1973 War had revealed a growing threat to the tank, time and time again the concept of

"combined arms" was put forward as if it were some great and revolutionary discovery.(72) In fact, however, already the German Panzer divisions had been specifically organized for combined arms warfare and it was by combined arms that every major campaign was waged since at least 1942 on.

Meanwhile the cost of those arms had risen to the point that, even for the largest power on earth, to continue building them began to appear like a prescription for bankrupcty. The more expensive the weapons the stronger the temptation to stretch development, reduce numbers, skimp on maintenance, and lower readiness.(73) The order of battle had to be pared down: a process which started in the US during the so called "less is more" era of the early seventies and began to affect the USSR a decade or so later.(74) Especially in the case of limited war--in truth, the only kind still possible--even the largest anticipated conventional operations would presumably involve no more than a few divisions and last no more than a few weeks. Nor, presumably, would they be able to penetrate very deep or overrun large tracts of inhabited country, since in that case the war might well cease to be limited.

In the end, the outcome of these developments was to make the term "strategy" itself appear less and less appropriate. In the US at any rate, during the eighties it was replaced by something known as the "operational art of war", first put forward by the so called "military reformers" and then adopted as the core subject studied at the National Defense University. The Reform Movement grew out of the Vietnam experience where, it was felt, the US armed forces had failed miserably in that they poured in the three M's (money, machines, and men) but failed to address the enemy. Accordingly, it emphasized maneuver at the expense of attrition, mobility at the expense of firepower, and obtaining leverage at the expense of frontal assaults. To the extent that they encouraged awareness of these factors and caused some manuals to be rewritten, the Reformers may have done some good; the Gulf Crisis gave

the forces one last opportunity to apply what they had learnt. However, to the great majority of the wars fought during the second half of the twentieth century--namely those "without fronts"--this kind of strategy was simply irrelevant.

The more conventional strategy was heading towards a dead end, the greater the tendency to focus attention on nuclear strategy. This, too, fell into two kinds, i.e warfighting on the one hand and deterrence on the other. While the term "strategy" might be and was applied to nuclear warfighting, this usage should not hide the fact that there exist some critical differences between the two fields. First, in view of the power of nuclear weapons presumably there would be no need to attack a target twice, thus giving the lie to Clausewitz's dictum that war does not consist of a single blow.(75) Second and most important, in four decades no meaningful defense against nuclear weapons has been found. In the absence of such a defense, a nuclear war between the superpowers would not involve a reciprocal action, or interplay, between the forces; which very interplay represents, to quote Clausewitz again, the essence of strategy.(76)

These facts did not discourage the doctors Strangelove of this world from devising countless nuclear strategies over the years, and indeed doing so was transformed into a cottage industry. There was all out nuclear war which would be short and limited nuclear war which would be more protracted. There were first strikes and second strikes; significantly, no one seemed inclined to explore the possibility of a third strike, though there was some talk of "broken-back warfare". There were countervalue strategies aimed at the opponent's cities, counterforce strategies aimed at his nuclear forces, and decapitating strategies directed against his government, command centers, and communications system.(77) Some strategies aimed at the opponent's annihilation whereas others were merely designed to make him pauze and think.

The remarkable fact about all these strategies was that, the more numerous and more sophisticated the technical means available for their implementation, the more pointless it all seemed. A quantitative analysis of American war plans supports this claim. From 1945 to 1950 the Air Force is said to have devised ten different blueprints for a nuclear offensive against the Soviet Union, an average of two per year. During the next decade (1951 to 1960) the number dropped by three quarters to one every two years. Since 1962 there have only been three such plans, an average of little more than one every ten years.(78)

Thus, the growth of nuclear arsenals caused warfighting to look less attractive with each passing decade. Faute de mieux , "strategy" also began to be used in the sense of a method, or methods, designed to prevent a nuclear war from breaking out. Out of this, deterrence theory grew. Previous works on strategy had scarcely mentioned deterrence, (the term does not figure in any of the three indexes of Clausewitz that I consulted). All at once, perhaps half of the literature was devoted to it. The meaning of deterrence and the best ways in which it could be achieved were discussed in countless publications. Armed with the tools of psychology and cognitive theory,(79) scholars analysed capability and credibility, reality and perception. Deterrence could achieve its aim either by denial or by punishment. It could be symmetrical, as between the superpowers, or assymterical as between a superpower and some much smaller country.(80) In some situations it was supposed to be stable, in others unstable. Some strategists considered it necessary to lower nuclear thresholds in order to deter: others required that they be raised in order to safeguard the world's continued existence. Deterrence was merged with games theory and dressed up in mathematical equations. Thus it became an esoteric science comprehensible--if at al--only to a few university professors. Meanwhile there is no evidence that decision makers took much notice. As one authority aptly wrote, c'est magnifique mais

ce n'est pas la strategie .(81)

Whereas traditional strategy had been associated with war, much of nuclear strategy operated only in peace and, indeed, was specifically designed to preserve it. This turned strategy into a continuous exercise: as much as peace penetrated war, war also penetrated peace. Traditionally strategy had been the jealously-guarded province of the military. Now that war itself came to be seen mainly as something to be prevented or deterred, increasingly it was dominated by civilians and (in the US) the so called "defense community". Whereas previously it dealt with the deployment of armed forces and their operations against each other, now it was extended until it came to include every aspect of national defense. It became possible to talk of a country's political strategy, economic strategy, technological strategy, and any number of other strategies. Most of these only had the most tenuous connection with strategy as traditionally understood. Since very often it was a question not of waging war but of preparing for it, many of them ran directly counter to Clausewitz's warning that fighting is an art sui generis which should not be confused with anything else.(82) The opponent, who is ordinarily the very factor that makes strategy into a separate field, was often absent; in other cases he was to be found on one's own side, especially when it was a question of distributing scarce resources. "Strategy" became one of the buzzwords of the age, meaning the methodical use of resources to achieve any goal from selling consumer goods to winning a woman. In the process, it lost most of its connections with the conduct of large scale war.

More fundamental still, the objective of strategy changed. Whereas previously it had been to overthrow and destroy the enemy--the more so the better--now the most it could achieve, or threaten to achieve, was to inflict a certain amount of pain. Instead of attempting to put the opponent in the worst of all possible situations, now it sought to make sure that, for him,

life would still be tolerable even after surrendering to our demands. As a result, the practical business of strategy--to the extent that it has a practical business at all--was also transformed out of all recognition. To quote the greatest of all post-1945 strategists, it consisted of "the diplomacy of violence", "the art of commitment", "the manipulation of risk", and "the dialogue of competitive armament".(83) Falling short of war, and often even if they did form part of war, military moves lost whatever autonomy they may have had. They became part of a complicated game whose purpose was to signal one's intentions, communicate one's claims, make one's threats appear most effective, retreat without losing face, and in general bargain with the enemy; all the while, doing one's best to prevent the world from being blown up.

Understood in this way, history came around full circle. The birth of strategy had originally taken place at the time when the rise of an abstract entity, the state, enabled military affairs to become separated from politics and commanders from politicians; also, it was the state which had provided the large spaces needed for the forces to operate in. Now that space no longer offered protection and the overriding goal of strategy was to prevent war or limit it, the process went into reverse gear. As the history of countless international crises from 1945 to 1990 demonstrates, in the vast majority of cases it was not soldiers who strategized but statesmen and politicians; conversely, soldiers entered war academies which supposedly taught them politics among other things. Ninety percent of active "strategy" came to consist of crisis management. As each successive crisis formed, mounted, peaked, and went away, threats were made and forces put on alert. Sometimes units were also moved around, arms sold to clients, and wars fought by proxy. Though there were many tense moments, only one or twice did either superpower get the opportunity to engage in the kind of large scale warfighting which

traditionally marked the point where politics ended and strategy took over. Nor, in the vast majority of cases, did even the more modest "operational art of war" get a chance to show what it could do.

As "strategy" turned into mere posturing, over time the effectiveness of that posturing declined. With nuclear weapons known to be plentiful, deployed, and capable of instantly destroying civilization as we know it there was no need to rattle them. Both sides learnt to play the game of threat, counterthreat, bluff, and brinkmanship equally well. As a result, in virtually no case was either able to gain a positive advantage or change the status quo by making nuclear threats; even the greatest "victory" ever won in this way, namely the withdrawal of Soviet missiles from Cuba, was immediately balanced by President Kennedy deciding to remove American missiles from Turkey on the very next day.(84) From Central Europe to Korea, the most important frontiers were frozen into place and cemented into concrete walls. True, all over the Third World "gains" continued to be made and "losses" suffered; however, as far as the available evidence goes none of the numerous changes which took place was occasioned by, or even connected with, whatever shifts may have taken place in the central nuclear balance. Throughout the period between 1945 and 1985, whenever some third rate banana republic transferred its allegiance from one superpower to the other this was invariably the result of regional considerations; coupled, not seldom, with a domestic coup .(85)

If only because both sides unerstood the danger inherent in nuclear crises, over time they tended to become less frequent. To go by one list,(86) there were six crises involving nuclear threats between 1948 and 1958, three between 1959 and 1969, and only two (three, if Iraq is counted) since then. Moreover, time has caused the crises to grow less acute. Probably the last time when a serious danger of strategic nuclear war existed was during the 1962 Cuban Missile Crisis. As far as we know, the last occasion when the

nuclear forces of a superpower were put on alert was in the aftermath of the 1973 Arab-Israeli War almost twenty years ago; even then, scholars familiar with Soviet military-political thinking considered that the crisis existed mainly in President Nixon's imagination.(87) By contrast, when a spokesman for President Carter hinted that nuclear weapons might be used if the USSR tried to move from Afghanistan to the Persian Gulf no corresponding military moves took place and few people even noticed that a crisis existed. Finally, in the eighties the time arrived when both sides started wondering whether the game was worth the candle. As soon as the question "what for" raised itself the Cold War was all but over, and the walls started coming down.

To sum up, the fact that "strategy" is one of the buzzwords of our age should not make us forget the transformation in its nature. Whereas previously strategy had been the art of waging war, now its overwhelming goal was to preserve peace. Whereas previously it stood for large scale warfare between large scale forces, now such warfare remained possible only if and where the most powerful weapons by far were not yet available. Whereas previously the most effective operations were those taking place far behind the enemy's front, now for the most part such operations became too dangerous to contemplate; and, insofar as they involved occupying large inhabited spaces, almost certainly futile in the long run. Though numerous nuclear warfighting strategies were designed to overcome these defects, they differed from traditional strategy in several critical respects. Of those, the most important was the absence of any meaningful interplay between the parties. Since there is and almost certainly can be no defense, the strategies in question have been limited to exercises in which the opposition was provided by computers.

The result of all this was to transform warfighting as it applies to the superpowers into deterrence, military operations into mere posturing.

Increasingly perceived as both useless and dangerous, even that posturing ended up by abolishing itself. As of the time of writing strategy has retained its effectiveness only when directed against third rate powers such as Iraq, and even in this case the final outcome remains to be seen. Fearing escalation, civilians on both sides of the Iron Curtain have asserted tighter and tighter control over strategy, causing the military to be downgraded until they were compelled to content themselves with the so called operational art of war. Most of the time they were unable to exercise even that art, either because the opponents were almost risibly dimunitive or because "operations" as understood from Jomini on are irrelevant to the most important forms of war in our age, namely guerilla and terrorism.

d. Conclusions

As the twentieth century comes to an end, we have reached the point where nuclear war between the superpowers--or what is left of them--seems out of the question. Limited war between one of those powers and some third country which does not possess nuclear weapons is still possible; however, it is becoming clearer with every passing day that, in such a war, the opponent would have to be particularly small, weak, and isolated if he is to be fought at all. Meanwhile the meaning of strategy has been transformed. To the extent that it has not turned into an exercise in make believe, it is now best exemplified by the kind of threat and counter threat, move and counter move, which characterized the early weeks of the 1990 Gulf Crisis.

Though future historians will no doubt be able to point out many reasons why all this has come about, there can be no question concerning the critical roleplayed by the nuclear threat. By putting the continued existence of the victor into question, that threat has permitted world peace to survive, and

ultimately transcend, acute international rivalries between the superpowers. During much of the time those rivalries were marked by unrestrained technological competition, some of it highly destabilizing; extreme assymetries in military capabilities, even to the point where one side possessed a nuclear arsenal and the other did not; intense, almost paranoid, internal pressures favoring arms races; command and control arrangements which, in retrospect, can only be called hair-raising; and at least one of the most absolute, blood-thirsty, dictators in all world history.

Perhaps more remarkable still, deterrence has survived its own logical contradictions.(88) Lowering nuclear thresholds to achieve credibility did not lead to war any more than raising them did. A relatively small arsenal of massive weapons did not tempt its owner to strike, but neither did a much larger number of much more accurate ones. Assymetrical capabilities did not affect the balance, at any rate not sufficiently so to make an important difference. On the conventional plane, deterrence survived both the tripwire concepts of the fifties and the doctrine of "flexible response" adopted from the sixties on. Though the price of peace consisted of enormous expenditure, constant vigilance, and some tense moments ultimately that peace held. As it held, the time came when people began to ask whether the tense moments, the constant vigilance, and the enormous expenditure were justified. At that moment the dissolution of one superpower began, and the other may yet follow suit.

Chapter III. Regional Balances

As of the middle of 1990, it seemed as if nuclear weapons had finally brought not just war between the superpowers, but competition between them to an end. On both sides of the Iron Curtain the armed forces, built up at enormous expense during forty five years of Cold War, began to look somewhat superfluous; on both sides of the Iron Curtain, plans were being announced to cut them down very sharply. Then, coming like a bolt out of a blue sky, Saddam Hussein invaded Kuweit. Iraq has a population equal to about one fifteenth of America's, whereas her GNP--at the time it was last published--amounted to approximately one seventieth. Here was a target too good to miss.

Even so, one cannot help wondering what would have happened if Saddam Hussein had possessed just 50 ICBMs, armed with a single nuclear warhead each and capable of reaching the continental US; to judge by President Bush's repeated statements on the matter,(1) presumably the outcome would have been entirely different and the war against Iraq would never have been launched. However, a lesser force might have done just as well, or almost so. Had Iraq possessed only twenty IRCBMs capable of reaching Rome, Paris, and London, then one can only suppose the B-52s would not have taken off from British soil on their way to bomb Iraqi targets. Even a mere ten Scud missiles, known (or strongly suspected) to be armed with nuclear weapons might have caused the Saudis--and the other Arab members of the coalition, and Turkey--to think twice before allowing the Americans to launch a war from their soil or participating in military operations. Finally, had just one of the extended range Scud missiles which <u>did</u> reach her--in spite of everything the Patriots could do(2)--been armed with a medium sized nuclear warhead, then as of January 1991 Israel would no longer have existed.

Thus, the Gulf War was made possible solely thanks to the fact that, alone of all the countries possessing armed forces nearly as large or sophisticated, Iraq did not have access to nuclear weapons. Had just one percent of the hundreds of missiles and cruise missiles launched during the war been armed with such weapons, then much of the Middle East would have been turned into a smoking, radiating wilderness. After forty five years of competition, nuclear weapons have finally made war between the superpowers--and even, it seems, between them and much smaller nuclear powers--impossible; and so it remains to see whether the same logic can be expected to prevail in regional conflicts.

a. South Asia

1. China

To understand the reasons behind China's decisions to build the bomb, it is necessary to go back a little in history. Seen from the vantage-point of Beijing, the entire century since 1840 had been one of constant humiliation at the hands of stronger, technically more advanced but morally quite corrupt, Western imperialist powers. Those powers had used their superior weaponry in order to impose unequal treaties upon China, tear away choice morsels of its territory, butcher those Chinese (such the Boxers) who dared offer resistance, and finally fight large-scale war inside its borders. The crowning humiliation was inflicted when Japan, traditionally regarded as a kind of "younger sister", first joined in the process of dismemberment and then took over as the leading imperialist power; thus revealing China in all its helplessness

Though the victorious outcome of the Civil War put an end to foreign intervention on the Chinese mainland, looking back in 1949 the Communist leadership might well have felt that the job was left incomplete. On the

island of Taiwan there remained a would-be alternative government guaranteed by a foreign power; moreover, the Korean War brought an "imperialist" presence back on China's border and, what is more, put the PLA in contact with modern firepower for the first time. Korea, it will be remembered, had served the Japanese as the base from which they had set out to invade China in 1932. Though the final outcome of the War may have been acceptable to the Chinese,(3) the "human wave" tactics used to offset their technological inferiority necessarily led to terrific casualties. To end the War, the US under the Eisenhower Administration brandished nuclear weapons in a fairly open manner.(4) What is more, it used secret diplomatic channels to warn the Chinese of the atomic consequences that might follow if they failed to reach a settlement.(5) Just what role was played by these threats in China's decision to bring the war to an end we do not really know;(6) no country has ever admitted surrendering to nuclear blackmail, a factor which greatly complicates the present study. At a minimum, it must have given the Chinese leadership food for thought.

Against this background, China's concern with nuclear matters seems to date to the early fifties. Given the combination of traditional Chinese secrecy with Communist paranoia, our sources for this period are few and far between; essentially they consist of the memoirs of the man in charge, recently published, plus a handful of newspaper interviews, most of them rather general and granted long after the event. As best as can be gleaned from these sources(7)--and it must be remembered that they probably serve a purpose--the actual decision to build the bomb was taken in January 1955, i.e during the height of the Taiwan Crisis. With the US once again advertising its nuclear weapons to prevent the Chinese from achieving what were, from their point of view, perfectly legitimate demands, the leadership in Beijing was convinced that China would never be free of interference so long as she,

too, did not possess those weapons. Adding a touch of realism, sources recall an ecstatic Mao, playing with a piece of uranium that had been put on display and vowing to achieve success; and indeed the concerted drive that followed is best understood less as a purely "strategic" measure than as a national crusade.

In overall charge of the Chinese nuclear program was prime minister Zhou Enlai who reported to the politburo. Under him came Marshal Nie Rognzen, originally of the artillery branch, who was appointed vice premier and played the role of a Chinese Leslie Groves. The part of Robert Oppenheimer was filled by Qian Sanqiang; he and his wife, He Zehui, had studied with the Joliot-Curies (well known for their Communist sympathies) in Paris, and now they found themselves at the head of a scientific cadre numbering perhaps one thousand. Another prominent member of the team was Pen Huanwu, a student of Max Born during his Edinburg days. Apparently the most important missile expert was Qian Weichang, who had spent the war years working at the California Instititue of Technolgy Jet Propulsion Laboratory. The entire organization seems to have been in place by the end of 1955. Serious propsecting for uranium began in the same year, and prepartions for building a reactor for plutonium production got under way in 1958.

Meanwhile, following the Hungarian Uprising and its suppression, Sino-Soviet cooperation went into high gear. Prototypes of aircraft, ballistic missiles, and technical data began reaching China. So, in the first half of 1958, did Soviet nuclear specialists two of whom were nuclear weapons designers. The Soviets at one point seem to have promised China an "educational" bomb to copy; however, Soviet-Chinese cooperation, in nuclear matters as well as others, was never entirely smooth. During a summit meeting held at Beijing, the Chinese leader horrified his Soviet counterpart with his facile talk about the need to destroy "Imperialism"; even at the risk of a

nuclear war, and even if it should cost hundreds of millions of casualties which China, at any rate, was capable of replacing within a few generations.(8) Now it is not necessary to take Khruschev's account literally. Not only was he trying to justify the role he played in bringing about the Sino-Soviet split, but he himself has put it on record that he never liked or trusted Mao. Moreover, even if Mao did say something of the sort there is no need to regard him as crazy. When everything is said and done China, thanks to its enormous rural population, always has been, and still remains, more capable of surviving nuclear war than any other country. This is a fact which the leadership clearly understands,(9) and would be foolish not to exploit, at least for diplomatic purposes.

Though an exact date is not given, the meeting at the poolside in Beijing cannot have taken place too long before or after the Second Taiwan Crisis in which Mao, according to the best available sources, tested American resolve and got his figers burned.(10) The two episodes together--as well as the entire "adventurous" Chinese policy during those years--seems to have caused the Soviets to entertain second thoughts. In 1959 they started withdrawing their experts. They used various excuses to postpone delivery of the "educational" bomb; finally they pulled out altogether, leaving China with little more than a jumble of pipes for their half-completed gasseous-diffusion plant.

These were the years of the "Great Leap Forward". Industrial production plumetted, and so widespread was economic distress that it led to hunger even among the scientists involved in the nuclear project--a privileged group though they presumably were.(11) Construction of the reactor in the Gobi Desert was apparently delayed, leading to some internal debate concerning the viability of the entire program and forcing Nie Rongzen to switch from the plutonium to the enriched uranium road. In the end, construction of the

gasseous-diffusion plant was completed in mid-1963, reportedly coinciding with the delivery of the first ten tons of uranium hexafluoride. It was typical of the entire Chinese "leapfrogging" approach that, instead of building a primitive gun design first, they went straight for the relatively sophisticated, implosion-type bomb that was finally exploded on 16 october 1964. Within three years China also exploded a hydrogen bomb; she thus required less time to pass from one to the other than did any other country before or--as far as we know--since.

As they exploded their first bomb, the Chinese took another unique step. Amidst widespread concern about the military-political consequences that might follow from the nuclear status of a country avowedly committed to upsetting the status quo by revolutionary means, they issued an official declaration that a. under no circumstances would China be the first to use nuclear weapons, and b. under no circumstances would she subject non-nuclear countries to a nuclear threat.(12) Now it is true that the value of words should never be overestimated. The first pledge can be violated without notice during a crisis, whereas a nuclear threat to neighboring countries exists whether Beijing wants it or not and will have to be taken into account by them in all their politico-military considerations. Still, it is worth nothing that, as far as it goes, the promise contained in the declaration has been scrupulously kept. As compared to the other two superpowers, Chinese references to, and displays of, nuclear weapons and their delivery vehicles have always been few and extremely low-key; and this continues to be the case today.

Just as the Soviets assisted China in the early steps towards the bomb, so they provided help in the matter of delivery vehicles. First came the Hong 6, a copy of the Tu-16 bomber. This was followed by the DF-2, a copy of the Soviet SS-3 two of which had been given to China in 1958. Reportedly possessing a range of 1,450 kilometers,(13) the missiles were deployed along

the northwestern Chinese coast from where they were capable of reaching Japanese cities as well as American bases there. After 1966 the DF-2 was supplemented by the DF-3. Like its predecessor it was liquid-propelled but, with a range of perhaps 2,800 kilomters, could reach targets as far away as the Philippines. It was the DF-3 that allowed the Chinese to put their first satelite into orbit in 1970; by that time, approximately 100 missiles of both types had been deployed.(14) Unlike the superpowers, however, the Chinese did not choose to invest in hardened silos. Instead, a modest but apparently quite sufficient,(15) second-strike capability was achieved by hiding the launchers in the extensive, complicated, terrain presented by the mountains in the center of the country; whether all of these have been, or an be, located by satelite reconnaissance remains highly uncertain.(16)

In the meantime, the international situation was transformed. As the strongest regional power by far, China never required nuclear weapons to deal with her immediate neighbors, and whatever doubts existed on that score were conclusively removed by the victory which the PLA won over India in 1962. Insofar as building the bomb was not part of a wider drive towards national independence, self assertion, and scientific progress--all of which reasons figured in a Communist Party Bulletin on nuclear matters that was published in July 1958(17)--originally the enemy against which it was directed was the US. As the American involvement in Vietnam deepened, Chinese concerns on this account reached their peak during the mid sixties. Beijing respondd by extending all kinds of military and economic aid to the Viet Cong and North Vietnam, and also deployed 35,000 anti-aircraft troops inside the latter's territory. Though neither side cared to give too much publicity to the fact, these forces are said to have brought down several American aircraft.(18) Having quarrelled with Washington and Moscow--in 1963, the aftermath of the Indo-Chinese War witnessed the rare spectacle of both superpowers assisting

new Delhi--Beijing had good reason to feel isolated. These facts, plus the Cultural Revolution of those years, may account for the particularly strident character of no fewer than 29 nuclear tests. Violating the 1963 Test Ban Treaty (which China went out of its way to denounce) they were conducted in the atmosphere; culminating in the firing of a live warhead atop a ballistic city to a site inside national territory--a feat equalled by no other state before or since.

As the sixties drew to an end, the situation changed once again. In Vietnam, the Americans had become bogged down in an unwinnable guerrilla war, making their presence in Indochina appear as less of a threat. Tension with the USSR mounted, fueled partly by Chinese claims on territory taken away by the Tsars during the previous century and partly--although we do not really know--by the growing Soviet-Indian rapprochment . Things came to a head during the summer of 1969 when the Chinese, by their aggressive patrolling, provoked a series of border clashes that were the largest ever between two nuclear powers. The Soviets may have contemplated a preemptive strike against China's nuclear installations and may even have sounded out the US as to the stance it would take in such an eventuality;(19) however, the US reportedly refused to countenance the move. Whatever the exact sequence of events that followed, in the end both countries showed their awareness of nuclear realities by drawing back from the kind of escalation which might have led to war. In September 1969 Zhou Enlai travelled to Hanoi for Ho Chi Min's funeral and took the opportunity to meet Soviet prime minister Alexei Kossygin. Thereafter the border incidents came to an end, though the tension between the two countries did not disappear and both sides engaged on a formidable buildup of their armed forces in the region.

Meanwhile the Chinese continued to take steps towards force-modernization, albeit slowly and on a scale that did not even begin to match that of either

superpower. Development of yet another missile, the DF-4 which was capable of lifting a megaton warhead to a maximum range of 4,800 kilometers, began in 1965; deployment took place from 1971 on, enabling China to reach most Soviet targets east of the Ural Mountains.(20) The Chinese also built and deployed a handful of powerful, two stage ICBMs, known as the DF-5. In many ways this missile resembled the American Titan: provided with a stabilized-platform inertial guidance system, gimballed thrust chambers, vernier-engines and swivelling main engines for altitude thrust-vector control, it was a remarkable techonological achievement for a developing country and brought targets in the American homeland within range for the first time. A MRV (possibly, MIRV) test was carried out in 1982, and an SSBN carrying twelve missiles was launched in 1985. Organizationally speaking, responsibility for the land-based missile force--which in view of the obsolescence of the bomber force and the small size of the naval component forms the nucleus of the Chinese "triad"--is in the hands of the so-called Second Artillery Arm. Ostensibly this is just a service arm like all the rest. In practice, it seems to be closely controlled by the Politburo.(21)

Whether the Chinese have gone ahead and developed tactical nuclear weapons in addition to strategic ones remains uncertain. Zhou Enlai many years ago said this would not be done,(22) and todate no conclusive evidence to the contrary has been published.(23) On the other hand, the Chinese certainly do possess both the necessary technical capability and delivery vehicles in the form of fighter bombers, short range surface to surface missiles, and heavy artillery. China itself has been targeted by tactical nuclear weapons for over thirty years--in fact, ever since the US deployed them on Taiwan during the Quemoy Crisis.(24) It would be most surprising if the military-political leadership had taken no appropriate countermeasures; and anybody who went to war against them without at least entering this possibility into his

calculations would be out of his head.

Throughout the period since the Chinese first turned their attention to nuclear matters, remarkably little could be divined of their nuclear doctrine, if any. One reason for this was that Mao--so long as he lived--did not permit the development of open-ended strategic studies;(25) nor, truth to say, was such reticence entirely unsuited to the requirements of a country whose nuclear forces were (and are) small, comparatively primitive, and hopelessly outclassed by those of the superpowers. As their own drive towards building the bomb--achieved at heavy sacrifice amidst tremendous economic difficulties--shows, the Chinese leadership was always perfectly well aware of its power. As to any peculiar "ethnic" notions they may have held, my research has failed to disclose any.(26) In part, this may be due to the scarcity of suitable source-material; Chinese references to nuclear weapons tend to be few, far between, and of a vague, general, character, nor do they seem to share the fascination with technical detail that is such a prominent feature of Western "strategic" thought. However, it is probable that in China--as in other developing countries which built the bomb--any such notions were counterbalanced by the fact that, as latecomers to the field, they naturally looked to the first nuclear powers to teach them about it. After all, China's early nuclear scientists were Western-trained. Later, hundreds of technical, military and political cadres were sent out to attend Soviet academies. China's top leadership naturally followed and commented on the ideas raised by their Soviet allies concerning nuclear weapons,(27) and they are also known to have read Western literature on the subject from the early fifties on.(28)

As best one can make out from the few statements that have been made, China's main concern--national self-assertion and world revolution apart--was to deter an invasion; a possibility which, at a time when memories of the

Sino-Japanese and Korean War were still fresh, did not seem as remote or as absurd as, thanks in part to her possession of the bomb, it does today. At first, the threat seemed to come from the direction of US-assisted Taiwanese forces which, looking for popular support inside China itself, might try to reverse the decision of 1949; in 1958, this led to the distribution of a new Tactical Training Guide said to emphasize "modern military skills... under the conditions of atomic, and chemical weapons, and ballistic missiles".(29) When the American threat receded during the sixties, Beijing (which for reasons unknown had chosen to raise tension along the Soviet border) began to fear a Red Army advance in support of a preemptive strike directed against its nuclear installations. Fear of invasion apparently reached its height in 1969-71. It prompted Mao to say that, since China was a huge country that could not be easily conquered, he personally was in favor of surrendering some territory.(30)

In response to these fears, China did not imitate the doctrine of either superpower; in other words, she neither planned on the offensive first use of nuclear forces in case of war--the Soviet approach--nor followed the US in its attempt to deter war by a show of overwhelming (later, merely "sufficient") strength. Nor did the Chinese develop an explicit nuclear doctrine such as the one supposedly governing France's _force de frappe_ ; having given their word never to be the first to use nuclear weapons, presumably they could hardly divulge whatever plans they entertained to use them nevertheless. To the extent that Western concepts are applicable at all, their "strategic" stance is perhaps best described as minimum deterrence; in 1965, Mao is supposed to have told Andre Malraux that "all I want are six atom bombs--and then I know that nobody will attack me".(31) All this fits in well with the Chinese approach to things military, which has traditionally emphasized a low profile, secrecy, and--also in view of the country's very limited

resources--economy.(32)

Following the events of 1969, the Soviet forces in the Far East began an impressive process of reinforcement and modernization until they were turned into a formidable military instrument facing China. The buildup culminated during the late Brezhnev years, say between 1977 and 1982; leading to a lively debate in China concerning the appropriateness of "People's War"--the method by which the Communists had come to power--under "modern conditions".(33) It was feared that, as part as a possible invasion of northwest China, the Soviets might resort to tactical nuclear weapons in order to effect a breakthrough; conversely, there was some vague talk of the PLA itself employing such weapons during the second phase of the war, when the Red Army divisions would be halted and a counterattack mounted. Some large scale exercises were held, and some strange notions emerged concerning the abililty of those forces to operate under nuclear bombardment and in a radioactive envrionment.

As late as 1987, PLA training manuals continued to assert the merits of antiradiation protection, allegedly provided by smoke screens as well as a specially designed anti nuclear suits, goggles, and masks.(34) They developed a doctrine--at least on paper--for fighting a tactical nuclear war; one which emphasized such traditional PLA _fortes_ as close range fighting, night fighting, trench and tunnel warfare, and dispersion into small, mobile teams living off the countryside. How they could hope to reconcile such doctrines with the construction of modern, conventional, mechanized forces initiated by Deng Xiaoping after 1982 or so is hard to see. How they could hope to avoid escaltion from the tactical to the strategic level--given that the terrirotries of China and the USSR are adjacent without any natural border to separate them--is even harder to understand.(35) Still, what little we do know of Chinese notions does not seem more absurd than did similar doctrines

expounded in the US during the "Pentomic Era". Nor, to its credit, did the People's Liberation Army ever follow the example of the superpowers by putting their ideas to an actual nuclear "test".

Perhaps, the real reason why so little is known about China's nuclear doctrine is because it does not matter anyhow. While it may be true that Beijing retained its "revolutionary" stance longer than other Communist powers and still engages in occasional anti-imperialist and anti-hegemonist rhetoric, in practice the last time her armed forces went to full scale war was in 1962. Even then, only a small part of the PLA was involved in the fighting; since then, relations with India have become more or less normal if not cordial.(36) Beijing may not have displayed great intrnational responsibility in staging the 1969 border incidents with the USSR, but at any rate the situation was never allowed to get out of hand. Relations between the two countries have been slowly improving since the middle of the eighties, and in April 1991 it was announced that the two countries had reached agreement concerning the border between them. The Chinese did invade neighboring Vietnam in 1979, but only to a depth of 15 miles and only to withdraw almost immediately. Since then, their most adventurous foreign-policy operation has been to offer support to the rebels in Afghanistan and Cambodia. Even so, the scale on which they operated did not even come close to matching the efforts mounted by the US and the USSR, respectively.

Even the problem of Taiwan, which at one point formed the burning focus of China's relations with the rest of the world, has long become dormant. The last time the armed forces of the two countries exchanged a shot was in 1958. Though China almost certainly does possess the military force needed to carry out a landing on the island,(37) to use nuclear weapons for the purpose might wreak such destruction as to be counterproductive; to say nothing of the fact that the Nationalist Republic istself should be capable of producing both

nuclear weapons and delivery vehicles for them and may, indeed, have gone a long way towards those goals.(38) An invasion fleet launched from the mainland would also form an ideal target for tactical nuclear weapons, particularly if they were carried atop missiles rather than aircraft. Possibly as a result, the Chinese some years ago announced that the problem would have to be solved by peaceful means. In April 1991, the first Taiwanese delegation in forty years visited the mainland.

To sum up, on the whole there is no evidence that Chinese ideas on nuclear weapons are less realistic, or their policy in regard to them less responsible, than that of the countries which have been the subject of chapter II of this study. If Mao at one time described nuclear weapons as "paper tigers", this was long before China acquired the bomb. He himself later described that phrase as no more than a "figure of speech",(39) and none of his successors has cared to repeat anything of the sort.

2. India

Meanwhile, to the southwest, the Indian nuclear arsenal has also been developing. India's concern with nuclear matters is actually older than China's, dating from the late forties when Jahawarlal Nehru organized an Indian Atomic Energy Committee with himself as its head.(40) The man in charge was his protege, Homi Bhaba, another one of those Westernized scientists who did so much to establish the nuclear progreams in several developing countries and who, in this case, was just like an Englishman in everything except the color of his skin.(41) The Indian effort differed from the Chinese one in two important ways. First, the country is democratic and discussion quite free. Accordingly much information was always available about the program, which was and continues to be the subject of frequent debate in parliament, official and semi official literature, and the press.

Second, it involved the construction of a far broader scientific, technical, and industrial infrastructure. Much of this had no military implications whatsoever, being designed to exploit the country's abundant reserves of thorium for purely civilian purposes.(42)

As Nehru and his successors saw it, India--having missed the Industrial Revolution and suffered conquest by Britain as a result--was not about to miss the Nuclear Revolution too, particularly as this was considered as one way to catch up. India, however, was determined not to be dependent on foreigners for this crucial aspect of her development; hence the rejection of international controls and the insistence on indigeneous development of every step in the nuclear fuel cycle.(43) The nuclear energy program also had this advantage that it cut across the country's federal structure. As the Central Government's special preserve, it is one high-prestige field of endeavor where the latter's otherwise somewhat doubtful competence can be put on show.(44) Though the Indians undoubtedly realized that a successful program would give them the bomb if desired, there is no proof that this was their goal from the beginning. In spite of occasional querries in parliament,(45) during the early 1960s there were still no indications that India was planning to build a weapon.

How Nehru, who in 1957-8 had orchestrated the Hindi-Chin Bhai Bhai (Hindu and Chinese are friends) campaign, allowed himself to become entangled in a military coflict with China remains unclear.(46) It is certain that the 1962 war came as a shock to him,(47) and in fact he died soon thereafter. The Indians have never given up their claim to the territories lost in 1962; on the other hand, looking back they tend to see their clash with China very much as a marginal affair.(48) It did not touch upon fundamental issues pertaining to the country's basic security, the more so because the post- 1962 border line turned out to be much easier to defend.(49) However, India's

relationship with Pakistan was a different matter altogether. Each country in a different way posed, and continues to pose, a challenge to the other's very existence. Pakistanis cannot be persuaded that India has reconciled itself to their country becoming a separate entity; and in fact, given India's much greater size, resources, and strategic potential, it is difficult to see how New Delhi could cease to present at least a latent threat to its neighbor even if it wanted to.(50) Conversely, Pakistan's self-proclaimed mission as a home for the subcontinent's Muslims is a permanent challenge to India, threatening her with dismemberment.(51)

The two countries had scarcely been born when they engaged in bloody conflict over Kashmir, an issue which has continued to form a bone of contention ever since. Then as now, neither side could afford to give in: India because allowing secession to take place (a possibility that was apparently contemplated by Nehru during the early years) might well prove the first step towards disintegration, Pakistan because of intense popular pressures. Being much the largest power in the region, India has always sought to exclude external players and soon after independence proclaimed its neutrality in the struggle between Moscow and Washington.(52) Conversely, Pakistan as the weaker party accused India of "hegemonism" and, by way of a counterweight, sought and received outside assistance by becaming a founding member of CENTO in 1955. During the next decade this gave her access to American military assistance including F-86 and F-104 fighters as well as M-48 tanks. Supposedly their purpose was to defend against a Soviet invasion of the subcontinent; in actuality, it was to push an irredensits claim against India.

In 1965 the Pakistanis, then under the military government of Mohammed Ayub Khan, thought that their time had come. India was only beginning to recover from her humiliation at China's hands. Nehru was dead and his

successor--known as "Little [Lal Bahadur] Shastri"--did not inspire confidence. It is also possible that the Pakistanis were already thinking of the day when India would acquire nuclear weapons and an attack on her would become too dangerous to contemplate; they must have taken notice of Homi Bhaba's 1964 statement--delivered in answer to questions in parliament concerning the implications of the first Chinese explosion--that India was capable of producing the bomb within 18 months.(53) Apparently in the feeling that time was running out, they took the initiative in staging a number of border incidents in the Ran of Kush during the spring of 1965. That summer Pakistan went to war, launching a full scale _Blitzkrieg_ with the aim of occupying Kashmir. The attack was successful at first, but later it stalled as the Indians counterattacked and outflanked their opponents from the southwest. Ultimately Soviet influence was brought to bear and the Taskhent Agreement signed, restoring the _status quo ante_ . As a result both national leaders found themselves violently denounced for defeatism, each in his own country.

Throughout the late sixties, India's nuclear infrastructure continued its steady expansion as power stations came on line and various capabilities involving the fuel cycle were acquired. Each time the Chinese tested another device there was a storm of querries in the Indian Lok Sabha (parliament) concerning the state of India's nuclear program and the need to come up with an appropriate response; each time the government patiently responded that, although the country's scientists were capable of producing nuclear weapons on comparatively short notice, there was no need of doing so.(54) Insofar as the 1965 war had proved that India with her much superior size and resources had nothing to fear of Pakistan, there was logic behind this position. A real, existential threat to India could develop only in case China and Pakistan united against it. This was a possibility which, though it could never be

entirely ignored, did not materialize either in 1965 or later during the 1960s.

Meanwhile India's international position was transformed. Without officially abandoning non-alignment, New Delhi took advantage of the Sino-Soviet split to draw much closer to Moscow. Beginning in 1964, it became the recipient of large scale technical and military assistance;(55) India's armed forces were rebuilt with Soviet aid, and in August 1971 the two countries, in a move obviously designed to counter the growing American-Chinese _rapprochement_ , signed a Friendship Treaty. An opportunity for taking revenge on Pakistan was eagerly awaited, and one finally presented itself towards the end of 1971. The two parts of Pakistan had long been at loggerheads concerning the allocation of national resources and also as to who, Islamabad or Dacca, should control the affairs of East Pakistan.(56) Civil War broke out in the autumn, not without some Indian encouragement. Terrible atrocities were committed by the Pakistani Army, causing large numbers of regufees (the Indians claim, ten million) to cross the border into India. Here was an opportunity too good to be missed. Mrs. Gandhi ordered her forces to "liberate" East Pakistan, an objective that they accomplished in short order.

Looking back, the year 1971 proved to be the watershed in the subcontinent's slow drift towards what is now almost certainly a stable, if undeclared, nuclear balance of terror between China, India, and Pakistan. Several factors were involved, and disentangling them is no easy matter; particularly since each side in the Indo-Pak conflict is eager to blame the other for initiating the proliferation-process. Apparently the single most critical move was made by the US. Just as the war between India and Pakistan was at its height--Mrs. Gandhi's forces were actually occupying several thousand miles of West Pakistani territory--President Nixon sent the aircraft

carrier Enterprise into the Gulf of Benghal. The move was intended as a warning to India;(57) although, like every other country which has ever been in a similar situation, the Indians subsequently claimed that they were not impressed and that the attempt to blackmail them had miscarried.(58) Still, it must have given them cause for thought.

The Indians also claim that, immediately after the War, their intelligence service got wind of a cabinet meeting called by Pakistan's new prime minister, Zulfikar Ali Bhutto. Like his rival Indira Gandhi, Bhutto belonged to the Indian aristocracy and had received an excellent Western education. Having been one of the millions who moved to Pakistan for religious reasons in 1947-8, he became minister of atomic energy during the mid sixties and laid the foundations for his country's nuclear program by contracting with Canada for a civilian power reactor.(59) As foreign minister under General Yahya Khan, Bhutto was regarded in New Delhi as the latter's evil genius; in January 1972 he found himself called to salvage what was left of his country. One of the first things he did was to hold a cabinet meeting in which he vowed--not, the Indians claim, for the first time--that his countrymen would "eat grass", if necessary, to obtain the bomb.(60) As best as anyone can make out it was these two incidents, coming within a month of each other, which finally pushed India into testing its so called "peaceful nuclear bomb" in 1974. This, of course, does not prove that the device actually exploded was the only one in the Indian arsenal; let alone that nuclear weapons had not been available to the Indians several years previously.

Since 1974, the Government of India has continued to claim that it neither possesses nuclear weapons nor intends to develop them.(61) Though no further bombs were exploded the nuclear infrastructure continued to expand, the most notable step being the inauguration in 1985 of an advanced breeder-type reactor which gave the country unlimited access to plutonium. In 1990, the

Indian nuclear arsenal was estimated to include at least forty to sixty warheads;(62) besides which great progress was also made in regard to delivery vehicles. India has acquired modern Soviet fighter bombers (some of them manufactured under license) and demonstrated technological prowess by launching weather- and communications satelites. New Delhi purchased an aircraft carrier from Britain, contracted to lease an SSBN from the USSR (the agreement was later cancelled), and almost certainly developed and deployed an IRBM force capable of reaching most, if not all, cities in China.(63) As part of their modernization the land forces acquired nuclear-capable modern artillery weapons; while the Indians should be capble of developing the necessary tactical warheads for them, whether they went ahead and did so is uncertain.(64) All this and more--the Indian armed forces are now the fourth largest in the world, much of them reasonably modern--was achieved without the defense budget ever exceeding four percent of GNP. Although this probably excludes much of the expenditure for the nuclear infrastructure which is divided between other ministries, still it is far less than in the US, and roughly comparable to that of medium sized European states such as Germany or France.

As their armed forces expanded, the Indians have also developed a remarkable "strategic" literature. While including the occasional dud, by and large the quality of that literature will stand comparison with any in the world. This is not surprising, given that much of it is meant for foreign consumption and that close ties exist between India's "defense community" and its counterparts in other developed countries. Though the community includes senior officers, usually their contribution is limited to the occasional brief lecture. The most articulate members are government officials and academics who are sometimes interchangeable as they move in- and out of power. The occasional turban apart, a meeting at the semiofficial Institute for Defense

Studies and Analyses (IDSA) in New Delhi even looks like one at Britain's International Institute of Strategic Studies, which again is not surprising considering that it was modelled on the latter. To gain access to the international community Indian defense publications are now being printed on high quality paper, thus obliterating the last external differences between them and their foreign equivalents.

As far as nuclear weapons and nuclear doctrine are concerned, an analysis of India's "defense" literature points to several interwined lines of thought. The Indians depend on foreign aid for some of their internal development programs. Hence, one of their main concerns is to explain the reasons behind their persistent refusal to restrict their nuclear proram to purely civilian purposes or to submit it to international controls. Their argument goes roughly as follows.(65) In a world characterized by "vertical proliferation"--meaning the continuous modernization of the superpowers' already enormous nuclear forces--India cannot afford to relax her guard. The Indians wish to present themselves as a regional power surrounded by nuclear weapons on all sides: including also the south, where the Indian Ocean (their ocean) became the scene of a growing American naval presence from 1973 on. They constantly emphasize that India cannot match the superpowers' nuclear arsenal and has no intention of trying. On the other hand, and given also the refusal of other countries to disarm, the nonproliferation regime is perceived as unfair, discriminatory, and totally unacceptable. The Government of India would be sadly negligent of its duties if it did not keep the country's scientific, technological, and industrial infrastructure ready, up to date, and independent of foreign controls. In this way India claims to contribute to world peace or, at the very least, to do no more than anybody else to disturb it.

Apart from these broad geo-political considerations, the most intense

threat to India is perceived to originate in two quarters, China and Pakistan. The past has proven that each separately may be handled, but an alliance between them would constitute a real nightmare. If only because Bangla-Deshi "gratitude" proved to be short lived, the successful 1971 War which resulted in the dismemberment of Pakistan did not really change the strategic calculus; in fact, 1971 also marked the year when China replaced the United States as the most important source from which Islamabad acquired its military hardware.(66) China, the IDSA strategists are fond of reminding us, has never recognized India's sovereignty over several nothern and northeastern provinces. It has assisted Pakistan in its nuclear-weapons program and may even have allowed the Pakistanis to test a nuclear device on its territory.(67) Though the Indians admit that it is not primarily directed at them, yet the fact remains that the Chinese nuclear arsenal is the third largest in the world; hence, a single Peaceful Nuclear Explosion (PNE; the Indians are fond of demonstrating their mastery of strategic terminology by inventing their own terms) that took place fifteen years ago hardly represents an exaggerated precaution. Now that the USSR is preoccupied with internal problems and has renounced much of its forermer role as a global superpower, this is even more the case.

Finally, there is always the Pakistani problem per se . The Wars of 1965 and 1971 have shown that, conventionally speaking, Islamabad is no match for the Indian armed forces; however, given the country's failure to achieve democracy and its inherently unstable political process a cautious attitude does not seem out of place. This is all the more the case because the Pakistanis have been working very hard to acquire a nuclear arsenal of their own and to all appearances have succeeded in doing so. Thanks to the US, which following the Soviet invasion of Afghanistan violated its own laws and waved the Symmington Ammendment, Pakistan also possesses a modern force of

fighter bombers capable of delivering the bomb to targets all over northern India.(68) The Indians are well aware of their vulnerability over the question of Kashmir, the majority of whose inhabitants are Moslems and would presumably join Pakistan if given the choice in democratic elections. Hence they never tire of creating scenarios in which the Pakistanis would use their nuclear arsenal to cut off the province from the rest of India and occupy it.(69)

As they voice these fears and make these accusations, the Indians are aware--and know that Pakistan is aware--of the potential for catastrophic escalation; including also the danger of nuclear polution and contamination along the common border which cuts through some of the most densely inhabited regions in the world.(70) In view of this it might be argued that, just as has long been the case between the superpowers, the entire question is really an exercise in make believe. True, neither India's nuclear forces nor those of Pakistan are comparable to those of the superpowers in size or sophistication. However, it is precisely the absence of advanced surveillance, reconnaissance, and command and control capabilities which, in practice, gives both at least a minimal second strike capability that is virtually secure against attack. Partly as a result, the last major Indo-Pak War is already twenty years in the past. In recent years the most importan expression of their continuing enmity has been rhetoric and the occasional guerrilla attack; also, the occasional shell which--weather permitting--they lob at each other across a remote glacier that hardly anyone can even locate on a map.(71) In January 1989 the two countries gaver a striking confirmation of their understanding of the nuclear danger by signing an agreement not to bomb each other's nuclear installations. Thus, they tacitly admitted that the time for the kind of pre-emptive strike which the Indians were alleged to be planning(72) had passed. During the last year or two there are also signs

that the conventional arms race between them has been slowed down, if not halted, and indeed the probability that this would be the ultimate outcome has long been recognized by the Indian military.(73)

3. Pakistan

Both China and India owe their nuclear arsenals at least partly to their great expectations, the former as the self appointed leader of world revolution, the latter as a self-styled regional power with interests in the Indian Ocean. Pakistan, by contrast, has no such visions of grandeur: despite occasional talk about an "Islamic" leadership role, the only real foreign-policy problem it has ever faced is India. The clash between the two countries is elemental. Though for different reasons, each by its very existence cannot help but pose an threat to the integrity of the other. As Zulfikar Ali Bhutto found out when he tried to make some slight steps towards defusing the issue in the mid seventies, this situation exists almost independentely of the leaders wishes. It led to three major wars within twenty-three years of independence, nor is there any reason to think that it is about to change in the foreseeable future.(73)

Pakistan's concern with nuclear matters dates from the mid fifties.(74) Much like the Indian program, originally the Pakistani one was at least as much civilian as military, since the atom was seen--and not in Pakistan alone--as a powerful lever that might help developing countries leapfrog their way towards modernity and progress. As in the case of India, too, the construction of a civilian nuclear infrastructure subsequently faciliated, if it did not permit, a greater emphasis on the military side.(75) The most important developments may be summed up as follows. Pakistan's first research reactor was built with the help of the International Atomic Energy Agency. It became active in 1965, and has since been used mainly for training purposes.

A Canadian heavy water type power-plant reactor (KANUPP) was supplied on a turnkey basis and became operational in 1972; however, four years later suspicions concerning Pakistan's effort to develop the bomb caused Canada and the US to cut off the supply of enriched uranium fuel. The efforts of Pakistani engineers to keep the reactor, whose declared purpose is to provide Karachi with electricity, operational have only been partly successful. It has, however, been claimed that success was sufficient to allow the Pakistanis to divert plutonium away from it during one six-month period in 1980 when the IAEA controls (automatic cameras) became temporarily inoperative.(76)

The factor which triggered the decision to stop supplies was the Pakistani attempt to purchase a plutonium separation plant from France; an attempt which the Pakistanis later tried to explain away as an "inconsistency", as if they were a woman fallen from grace.(77) Since then they have admitted building a small experimental reprocessing laboratory (hot cell), but claim its capacity is much too small to be militarily significant. Instead, efforts to acquire the bomb--which went into high gear after the defeat of 1971--switched to the uranium route. A key role was played by a Pakistani engineer, Dr. Abdul Qadir Khan. Qadir Khan studied metalurgy at Delft and Louvain between 1963 and 1972 and married a Dutch wife. He became thoroughly Westernized (apparently he considered applying for citizenship) and in 1974 obtained a job at a British-German-Dutch plant at Almelo. Whether he was already working for the Pakistani Intelligence Service at that time is not known; or so the Dutch, seeking to reassure their partners, claim. At Almelo he is said to have stolen centrifuge technology.(78) Returning to Pakistan in 1975, he masterminded the establishment of an enriching plant at Kahuta and in 1984 was able to announce his country's success in breaking the Western monopoly in this field.(79)

Since KANUPP cannot operate without the uranium which the Pakistanis are

unable to buy on the free market, the claim that this is the real purpose behind the Kahuta facility is at any rate not completely nonsensical. On the other hand, Pakistan is known to have tried to obtain other, specifically bomb-related types of equipment such as nuclear triggers.(80) Qadir Khan has given several more carefully-orchestrated interviews, at least one of them to a major English-language Indian weekly published in New Delhi.(81) Each time he discussed the remarkable strides his country had made in developing its nuclear infrastructure without, however, explicitly admitting that it either possessed the bomb or was planning to acquire it. As in the case of India, foreign estimates (summer 1990) concerning Pakistan's possession of perhaps 5-10 Hiroshima-type bombs are based on guesswork.(82) It is, however, credible guesswork.

Pakistan's most important means for delivering whatever nuclear weapons she may have consist of the forty F-16s which were supplied by the Reagan Administration as part of an aid package put together following the Soviet invasion of Afghanistan. Pakistan, with Chinese help, is probably also working on the development of medium range ballistic missiles capable of reaching northern India. However, few details are available about the program in question.(83)

As usual, the political and strategic background is both more interesting than the technical trivia and more complicated to understand. At the very root of Pakistan's insecurity stands its doubtful legitimacy. The country is undeniably an artificial creation without any roots in history; its very name, while also meaning "Land of the Pure" in Urdu, originally represented an acronym. Having been shaped out of one of India's ribs in 1947, Pakistanis from the very highest echelons of government down are forever concerned about the meaning and validity of the special "Islamic" mission which forms their country's <u>raison d'etre</u> . If only for this reason, they cannot make

themselves believe that India has ever given up its objective of reuniting the subcontinent, or ever will.(84)

In Pakistan, to express anti-Indian sentiment is always useful for domestic purposes since this is one of the few issues that really hold the country together.(85) At the same time, it cannot be denied that its leaders' fears are solidly grounded in geopolitical realities. Even before the 1971 War--which Pakistanis see as at least partly Indian-instigated--reduced their country's population by more than half, India always had several times Pakistan's population and her resources are greater in proportion. Under such circumstances for Pakistan to feel safe, let alone free and equal is well-nigh impossible; perhaps the only way for New Delhi to reassure its difficult neighbor would be to disarm approximately to the level of Karachi, which idea has in fact been raised many times.(86) The Indians, however, insist that the two countries' situations are not symmetrical. The China factor on the one hand, and their own position as a subcontinent jutting out into the Indian ocean on the other, makes it imperative to maintain armed forces far in excess of what would have been needed to face Pakistan alone. The cycle of assertions, accusations, and counteraccusations has now been going on for almost two generations. Many of the arguments raised in the early years retain their validity today, thus demonstrating how deeply-rooted the problems are.

To convince the external world--and itself--of the justice of its cause, Pakistan has developed a "strategic" literature which, with the exception of India, is without parallel in the developing world. From Mohammad Ayub Khan through the two Bhuttos (father and daughter) down to Qadir Khan himself, many leading Pakistanis have received at least part of their education abroad. As their utterances and publications prove, they feel themselves at home in the two cultures. This applies with even greater force to the nuclear community,

hundreds of whose members received their training in Western countries including Britain, Germany, the Netherlands, and the US. Moreover, Pakistan's officer-training complex--and, incidentally, that of India as well--was modelled after that of Britain and retains many of its original features.(87) To permit officers access to world-literature much emphasis is put on the mastery of English; with the result that not even a ruler of humble social background such as Zia (who was the son of a noncommissioned officer in the old British-led Indian Army) could have escaped Western influence. While Pakistan has not always been democratic, the periods of "military dictatorship" (1958-1971 and 1977-87) did not do away with all independent publishing activity. To its credit, the government never tried to make its citizens speak in a single voice or control discussion in the way that Communist countries do.

Like India, Pakistan is partly dependent on foreign assistance for its development. As in the case of India, therefore, a sizeable fraction of Pakistani publications on matters pertaining to foreign politics, strategy, and military affairs is intended for foreign consumption. The fact that periodicals such as Strategic Studies are government-subsidized gives them a semi-official character and dictates a certain uniformity in the basic approach; on the other hand, the very attempt to be taken seriously by foreigners implies that the sources cited and the type of argument employed cannot bo too notably different from those which appear, say, in Washington or London. Zia, who of all the country's rulers was the one to take religion most seriously, at one point had a book about the "Islamic" art of war produced and distributed; nevertheless, by and large Allah does not play a larger role in Pakistani discussion of nuclear weapons than Christ does in Western strategic literature. In brief, if Pakistanis (and Indians) entertain any "quaint" or "crazy" notions about nuclear weapons, then this literature is

the wrong place to look for them. The case may be different for other, more popular, works. However, India and Pakistan are not the only places where the media sometimes step forward with altogether idiotic ideas, especially if they are provincial and fundamentalist to boot.

Since the mid seventies the most important strands which form Pakistani thinking in regard to nuclear weapons may be summed up as follows. The decisive turning point was formed by the events of 1971 which are seen as an attempt by India, if not to destroy Pakistan then at any rate to assert its indisputable hegemony in the subcontinent. Pakistanis are not quite certain in their own minds how this evil fate was averted; angry at the US for refusing to supply Pakistan with (as they see it) sufficient arms for their self-defense, they are yet reluctant to ascribe their salvation to the Enterprise episode.(88) As we saw, the Indians accuse Bhutto of having embarked on an all-out drive towards nuclear weapons at the beginning of 1972. The Pakistanis turn the argument around, claiming that the impetus behind their nuclear development program was created by India's far more extensive one, culminating in the test of its so called Peaceful Nuclear Bomb in 1974.(89). Insofar as neither country admits to possessing nuclear arsenal, each may justifiably point to its own measures as purely precautionary. To put it in other words, Pakistan as well as India has mastered the intricacies of nuclear ambiguity.

Beyond the need to deter India, which they see as self-evident, Pakistanis sometimes engage in lose talk concerning the "Islamic" character of the bomb which they do not have. The phrase was first used by Zulfikar Ali Bhutto in his death-cell testament;(90) how seriously it should be taken is difficult to say. Pakistanis certainly take their Moslem mission seriously, even to the point of claiming that theirs is the only country founded not merely by Islam but for it.(91) As a result, Pakistan finds it easy to identify with the

Arabs in their conflict with Israel, and in fact to this day Pakistan is the only country (apart from Britain) which recognized Jordan's annexation of the West Bank back in 1948. Pakistani relations with various Arab regimes have had their ups and downs. During the seventies Bhutto, who had socialist pretensions, formed close ties--including, it was alleged, nuclear ties--with Lybia;(92) however, subsequent prime ministers have turned more towards "moderate" states such as Jordan, Egypt and, above all, Saudi Arabia. The latter country in particular is supposed to have provided Islamabad with financial aid for various projects, including the construction of an entire new city. It thus permitted savings which in turn were used to develop the bomb.(93)

On the other hand, Pakistan is said to have given assurances to Israel to te effect that the latter had nothing to fear of the "Islamic Bomb".(94) She not known to have supplied its Middle Eastern friends with anything like the technology that would help them develop the bomb independently, let alone extendec a nuclear guarantee to any Arab country against Israel.(95) Seen from this latter point of view, Pakistani policy has resembled that of regional states such as India or China more than it does that of the US with its pretensions at global power. If the US, in spite of the presence of 300,000 troops in Europe, has always experienced difficulty in making its nuclear umbrella credible, so much more so in the case of Pakistan and the Arab countries.

Finally, given that they do not admit possessing the bomb the Pakistanis have not developed a doctrine for its use; or, if they <u>have</u> done so, keep it well out of the public eye. The Indians at any rate can profess to be worried about a rather unlikely scenario such as a sudden nuclear-covered Pakistani attempt to seize Kashmir. The Pakistanis, well aware that the conventional balance between the two countries favors India,(96) apparently find it hard to

imagine the bomb being used under any circumstances save the extreme case of an Indian threat to their very existence. The situation of the two countries is not symmetrical in that no point in Pakistan is much more than 150 miles away from the Indian border, whereas much of India can only be reached from Pakistan by medium range missiles which, though they are probably under development, do not seem to be operational yet. However, both are actuely aware of their vulnerability to nuclear war in the densely populated border area between them, especially in case their nuclear installations should be hit.(97)

To sum up, before China acquired nuclear weapons there was occasional talk of "paper tigers"; since then, however, such talk has completely disappeared and China's policy in regard to them has been at least as responsible as that of any other country. Before India and Pakistan acquired nuclear weapons they fought three major wars in the course of twenty three years; during the fifteen years that have passed since the time when India did explode a nuclear device they have not fought even one, thus to some extent justifying the appelation "peaceful". The conclusion seems justified that, in spite of a few irresponsible statements and an occasional war scare, in every case where they have made their appearance--even if it is only a veiled appearance--the effect of nuclear weapons has been to help make their owners more cautious and less adventurous.

As of today, China is actually the only member of the nuclear club that has vowed never under any circumstances to be the first to put them to use. Not having admitted to possess the bomb, neither India nor Pakistan have threatened their use and indeed if they have developed "doctrines" for doing so they are kept well under cover. Relations between China and India have been slowly improving ever since the resumption of diplomatic relations in 1976, and in any case their rivalry is not seen as fundamental in either

country. The case of India and Pakistan is different, and the two countries have by no means given up their deeply-rooted enmity; since the former by virtue of its very size cannot avoid presenting a threat to the latter, there seems little chance that Islamabad will give up its nuclear option regardless of any external pressure. Still, nuclear weapons--even covert nuclear weapons--do count. Over the last two decades, actual hostilities between them have been limited to alleged support for guerrilla groups operating in each other's territory, and an occasional shell fired across a remote glacier.

b. The Middle East

4. Israel

With 1,100 and 900 million people respectively, China and India are perhaps the only two countries that could survive a full scale nuclear war. Though Pakistani analysts like to present their country's geo-strategic situation as "terrible", at any rate there is scant doubt that the vast majority among 100 million Pakistani individuals would survive military conquest at the hands of India. Neither propostion is necessarily true of Israel, a state the size of Los Angeles county tucked away in the midst of an Arab sea whose very presence in that region is often regarded as illegitimate. Of all the states considered so far, Israel is the only one which faces an existential threat. Should Israel one day be overrun by its neighbors acting singly or in combination, then there is little doubt in the minds of most Israelis that the result would be the mass slaughter of part of the population followed by the expulsion of the rest.

Seen against this background, Israel's concern with nuclear matters dates to the early fifties. Much like Mao and Bhutto, who are presented as making the decision to build the bomb under somewhat dramatic circumstances, sources

describe erstwhile premier David Ben Gurion pacing his office "like a lion in its cage" in front of a map while contemplating the immense differences in size between Israel and its neighbors.(98) The story of what happened next is well known and only needs to be summed up very briefly here.(99) An Israeli Atomic Energy Commission was set up in 1952. Its first head was Israel Rokah, another one of those European-educated (all Israeli scientists were European-educated) scientific administrators who, possessing vision and a direct line to the powers that be, did so much to set up nuclear energy programs in several developing countries. The first 5 MW research reactor was supplied by the US and went into operation in 1960. However, the real breakthrough came in 1957 when Shimon Peres, at that time serving under Ben Gurion as director general of the defense ministry, negotiated an agreement with France for the supply of a 26 MW reactor capable of producing plutonium. Construction near the southern desert town of Dimona started in 1958 and proceeded in secret. It was only towards the end of 1960, when the American Administration announced that it was in possession of photos taken by U-2 reconaissance aircraft, that Ben Gurion was compelled to acknowledge the installation's existence.

Like the Chinese (and, as we shall see, Iraqi) nuclear program, but unlike those of India and Pakistan, the Israeli one has always born an almost exclusively military character. As also happened in other countries, there was some debate inside the Israeli defense establishment concerning a. the need to strike a balance between the conflicting requirements of a nuclear deterrent on the one hand and those of conventional armed forces on the other, and b. the possibility that a nuclear Israel would cause some of the supposedly "irrational" Arab states to go nuclear too, thus increasing the threat rather than diminishing it. The "conventionalist" faction was led by Yigal Allon, at that time head of the left wing, activist, Achdut Ha'avoda

Party; the "nuclear" one by Moshe Dayan and Shimon Peres, at that time serving as minister of agriculture and deputy defense-minister respectively.(100) The debate spilled over into the public domain,(101) and may even have played a role in bringing about the resignation of Ben Gurion (and Peres) in July 1963.(102) Levi Eshkol, who took his place, was a consumate political operator famous for his skill in bringing about compromise. He succeeded in pouring oil upon the nuclear flames, toning down if not entirely preventing public discussion, and lowering the country's profile.(103) Bowing--or pretending to bow--to American pressure, he may also have ordered a temporary slowdown in the development of weapons and delivery systems in the form of surface-to-surface missiles.(104) In return, the US agreed to depart from its traditional policy and sell Israel conventional weapons such as Hawk anti-aircraft missiles, M-48 Patton tanks (provided out of West German stocks) and, later, A-4 Skyhawk light attack aircraft.(105)

Whether there was substance to Eshkol's policies--whether, in other words, they were more than mere whitewash designed to deceive Washington, or help Washington deceive the Arabs, or placate Israel's own anti-nuclearists--is not known. True, he agreed, to American inspection of Dimona and the reactor was in fact subjected to five visits between 1964 and 1968; however, there is evidence that "they were not as seriously and rigorously conducted as they would have to be to get the real story".(106) Be this as it may, when Egypt's Nasser initiated the May 1967 crisis Israel almost certainly did not yet possess an operational nuclear device;(107) presumably it was this fact that Ben Gurion was referring to when he accused the government of "a lapse in security matters" during the 1965 elections campaign. One may speculate that, faced with what appeared at the time as a threat to the nation's physical existence, a non-nuclear Israel found itself constrained to go to war at an earlier point than might otherwise have been the case.(108)

The swift, overwhelming victory in the June 1967 War at first seemed to justify those members of the Israeli establishment--including, besides Allon (now serving Eshkol as deputy prime minister), chief of staff Yitzhak Rabin--who had opposed basing the counry's defense on nuclear deterrence.(109) At the same time it brought into the government Moshe Dayan, a supporter of Ben Gurion and a leading nuclearist. Immediately after the war many Israelis thought that peace would soon follow, but this period of illusions was short lived. At Khartoum in September, the Arab countries reiterated their determination not to treat with Israel nor to make peace with her; the Soviet Union was supporting them to the hilt, and Israel did not perceive the US as forming a suitable counterweight.(110) It must have been sometime between June 1967 and the summer of 1969 that Dayan--whether with or without the knowledge of the rest of the government, as has been claimed--decided that Israel could wait no longer. The plutonium separation plant which the French had apparently supplied with the reactor(111) was activated, and the first bombs were assembled.(112) Delivery vehicles in the form of French-built Vautour light bombers had been available for a number of years, and before long additional ones were acquired in the form of the much more powerful American F-4 Phantom fighter bombers. As the War of Attrition (1969-70) drew to its end, Israel almost certainly had at its disposal a very small nuclear arsenal consisting of a handful of bombs. However, at that time the country's growing dependence on the US for military and financial support made it convenient for both Washington and Jerusalem to continue acting <u>as if</u> this was not the case.(113)

The period 1970-73 was the one when Israeli military prowess <u>vis a vis</u> the Arabs appeared at its height, and not to Israelis alone. During the War of Attrition the Egyptians in particular had been made to suffer one humiliation after another,(114) with the result that the mood inside Israel tended to

become extremely self-congratulatory; when the struggle came to an end, the fact that it had ended in a draw tended to be forgotten. The Israeli-American alliance was under some strain during the first half of 1970. However, in September of that year it reached its highest point ever as the two countries cooperated to stop the attempted Syrian invasion of Jordan. The subsequent period also saw the arrival of American arms--tanks, APCs, self propelled artillery, and attack aircraft--of a quality and a quantity that were beyond anything previously experienced by the IDF. In addition to everything else, the withdrawal of the Soviet experts from Egypt in the summer of 1972 gave Israelis a false sense of security. Spurred by intense internal pressures that demanded increased "social" expenditure, 1973 saw the defense budget as part of GNP cut for the first time since the early fifties. Headed by Dayan, Israel's military-political establishment seems to have convinced itself that the Arabs could never launch a war without air superiority. Since that was considered beyond their reach, the immediate threat at any rate had receded.(115)

In the face of all this, the outbreak of war in October 1973 came as a tremendous shock. As best as can be reconstructed, the Israeli government during the first 48 hours hardly understood what was hitting them; at first they (and, it should be added, the National Security Council in Washington D.C) thought this was merely another one among the very numerous border incidents that had taken place since 1967, albeit on a larger scale.(116) However, the Syrian successes on the Golan Heights and the defeat of their own first counteroffensive against the Egyptian Second Army on 8 October caused the Israelis to change from overconfidence to near-panic. Late that evening defense minister Dayan approached prime minister Golda Meir, saying that he had been "wrong about everything" and offering to resign. Shocked by this sudden display of pessimism on the part of the national idol--apparently

Dayan, employing highly charged language, had talked of "the fall of the Third House of Israel"--Mrs. Meir called for a cabinet meeting to be held on the morning of Tuesday, 9 October. At that meeting the decision was taken to arm the available bombs and load them aboard waiting fighter bombers.(117)

So far, the facts. Concerning what happened next, one may only guess. The 9th of October was the critical day for the Israelis on the Golan. This was particularly true in the north, where one brigade--commanded by colonel "Yanosh" Ben Gal--found itself under attack by an elite Syrian division (the 3rd Armored, riding T-62 tanks) and came within an inch of being overrun. The battle reached its climax towards noon. Having already lost 17 out of 24 tanks with which it entered the battle, the battalion commanded by Lieutenant Colonel Avigdor Kahalani was down to 3-4 rounds per tank and started withdrawing towards the escarpment overlooking the sea of Galilee; had the Syrians reached that point, they would have commanded a clear field of fire as far as Tiberias. Just how the desperate situation was saved remains unclear to the present day. According to some accounts the trick was done by an improvised unit consisting of a handful of tanks and commanded by an officer identified as Yossi (Y. Ben Hanan, subsequently head of the IDF's training branch) probing into the Syrian rear; however, that probe is not even mentioned by an American officer who examined the Syrian side of the hill. Alternatively, there _may_ have been a veiled Israeli hint concerning nuclear weapons dropped in Damascus' ears.

Be this as it may, the Syrians never attempted to use their heliborne forces in order to try and block the Jordan bridges in the same way as they _did_ seize the Israeli outpost on Mount Hermon. Moreover, when the Syrian withdrawal got under way it started from the rear and spread to the front; clearly, it did not simply reflect developments among the leading units. Minister of Defense Mustafa Tlas later claimed that the failure to press

forward toward the Jordan River resulted from a deliberate decision taken in President Asad's presence, adding that the time to discuss the reasons behind it had not yet arrived.(118)

Officially speaking the October 1973 War did not lead to any change in Israel's nuclear policy. Responding to pressure from abroad, the Eshkol government had been the first one to declare that Israel would not be the first to introduce--whatever that meant--nuclear weapons into the Middle East.(119) The same well-worn phrase continued to be used by top decision makers in the subsequent Meir and Rabin governments;(120) however, one may see a significant development in the timing of the various revelations. Thus it was in December 1974--just as the IDF was concentrating forces in the Beth Sh'an Valley in case the Syrians refused to renew the original UN mandate on the Golan Heights, due to expire in two weeks--that we find president Ephraim Katzir, himself a well known defense scientist, declaring that Israel could build the bomb.(121) The publication in Time of a story concerning the events of 9 October 1973--said to be based on leaks inside the Israeli Government, and printed without comment on the first page of Israel's leading daily--took place just as Minister of Defense Peres ordered partial mobilization in an effort to deter the Syrian Army from entering Lebanon and intervening in the civil war; it was followed by statements by both Peres and Dayan as to the need to maintain Israel's nuclear options.(122) Ten years later, the Vanunu episode came amidst Syrian pretensions at achieving "strategic parity" following Israel's withdrawal from Lebanon.(123) Looking back, and assuming that there is more here than mere coincidence, there seems to have taken place a gradual, carefully veiled, raising of Israel's nuclear profile.

The October 1973 War also marked a turning point in the public prestige of Israel's military-political establishment, hitherto regarded as almost sacrosanct but now becoming subject to increasing public criticism. The

outcome was the growth of a sophisticated "strategic" debate in many ways similar to that taking place in Britain and the United States on which, in fact, it was modelled. Just as India founded the Institute for Defense Studies and Analysis in New Delhi and Pakistan the Strategic Institute in Karachi, so Israel opened the Jaffee Center for Strategic Studies at Tel Aviv University. Like its Indian and Pakistani counterparts, the Israeli institute was headed by a former high ranking member of the defense establishment (in this case Major General Aharon Yariv, who had served as head of military intelligence in 1967). Like them, it is semi-official in character and to some extent dependent on the establishment for support, information, and recognition. There is no need to assume that the Center's publications reflect official positions on every point. On the other hand, there does exist a close identity in regard to the principal issues that they confront and, insofar as many investigators are ex-officers (intelligence), in regard to thought-processes also.

A survey of the Center's publications brings to light some interesting points. Its principal product, The Middle East Military Balance (published annually) goes into very great detail as regard the forces of Israel and its immediate neighbors. One may find, for example, supposedly exact data concerning the official name of Egypt; the length of Iraq's roads (both absolute and relative to its territory); and the number of training aircraft available to the Tunisian air force. As against this almost picayunesque detail, hardly any mention of all is made of Israel's Dimona reactor, nor of the fact that the country is widely believed to possess a nuclear arsenal of considerable magnitude, nor of any effects that this may have on the Middle East politico-strategic situation. As in the case of Israel's "official" establishment, this silence sometimes gives its publications a strange, almost surrealistic, character.

Among Israeli opinion-makers who are not members of the Jaffee Center, by contrast, the question of nuclear weapons has been discussed freely enough from the mid seventies on. The debate was sparked by an article in which Robert Tucker of Johns Hopkins University argued that the time had come for Jerusalem to openly declare its possession ofnuclear weapons; such a stance would be good for Israel, the United States (which would be able to disengage), and world peace.(124) Since then there has been much controversy as to whether Israel would be able to sustain the conventional arms race, and consequently whether she should or should not put limits on it by openly acknowledging its possession of the bomb.(125) The visit of President Sadat to Jerusalem in late 1977 signified the apparent willingness of at least some Arab governments to come to terms with Israel. This caused the focus of the debate to shift, the question now being whether a declared nuclear-deterrent posture coupled with a withdrawal more or less to the pre-1967 armistice lines could be relied on to put an effective end to the conventional aspects of the conflict.(126)

Though the present context makes it unnecessary to follow this debate in any detail, a few points are worth noticing. First, nuclear weapons are clearly regarded as a last resort. Though Israelis are as well aware as anybody of "the threat that leaves something to chance",(127) no Israeli has ever suggested that their use should be lightly undertaken or that it would carry any but the gravest consequences. Second, Israelis are acutely aware of their own country's extreme vulnerability to nuclear attack; however, those among them (such as Dr. Shai Feldman of Tel Aviv University, said to be acting to some extent as Shimon Peres' mouthpiece) who favor a balance of terror approach have pointed out that the Arab countries are almost equally vulnerable.(128) Third, though opinions naturally vary, there is no indication of Israeli experts holding any kind of view, or employing any kind

of argument, which would have sounded foreign to Western ears or looked out of place in Western publications; publications which, in any case, have long formed the preferred destination for many of their writings.(129)

As the seventies turned into the eighties foreign publications concerning Israel's nuclear capability in regard to both weapons and delivery vehicles--the Jericho missiles Marks I and II--multiplied. As a result, the government's official line became less and less credible even as a basis for discussion. Next, in 1986, came the Vanunu affair and drove the last nail into the coffin of ambiguity. It indicated that the capacity of the Dimona reactor had been enlarged at least once (from 26 to 70 MW) and that lithium deutride was being produced; hence, that Israel not only possessed five to ten times as many bombs as was previously thought possible but that her arsenal might include hydrogen, tactical, and enhanced-radiation warheads in addition to "crude" Nagasaki-type plutonium devices.(130) Though Israel gave a convincing demonstration of its technological prowess by putting a satelite into orbit in late 1988--against the direction of the earth's rotation, what is more--as of today none of these reports have been confirmed by the Government.

Since the very existence of a nuclear weapons remains unacknowledged, officially at any rate there can be no question of developing a doctrine for using them either for deterrence or for warfighting; the more so because the right-wing Likud Government fears lest open discussion of the problem will make the electorate question the value of Israel's continued occupation of the territories. Again, this has not prevented many Israeli academics and other opinion makers from Shimon Peres(131) down from raising the problem quite freely in the academic literature, the general press, and even the government-owned electronic media. Against the background of very great economic difficulties, the most important question seems to be whether Israel

can afford to follow other countries, placing greater reliance on nuclear forces for deterrence while cutting back its conventional ones.(132) Both before and during the Gulf Crisis one sometimes heard speculation concerning the use of tactical nuclear warheads in order to halt an Iraqi invasion of Jordan;(133) beyond that, nothing.

Meanwhile, in any case, the effect of nuclear weapons on Israeli foreign and defense policy is becoming clear enough even without any change in the official line. Though the size of the country is small, Israel has been successful in its attempt to keep the whereabouts of its nuclear arsenal a closely guarded secret. Its nuclear-capable Jericho missiles, high performance fighter bombers, and possibly cruise-missiles give it what is, in effect, an assured second strike force capable of surviving anything that the Arabs can throw at it at this time or in the foreseeable future. The result is that, as of 1991, the last major war between Israel and its immediate neighbors is already almost twenty years in the past. Barring unexpected developments, such as the disintegration of one or more of those states and their consequent inability to prevent their citizens from launching guerrilla attacks which might then escalate, there are no indications of another one breaking out soon; and indeed the governments of both Syria and Jordan seem very much concerned to prevent such an eventuality from taking place. Already in 1982 it was probably the existence of a nuclear umbrella, coupled with the Peace Treaty that had just been concluded with Egypt, which gave the Begin Government the necessary self confidence to embark on its Lebanese adventure.(134)

Marching along the path first taken by the US and followed, sooner or later, by every other country that acquired the bomb, Israel's conventional forces have actually been shrinking since the mid eighties and are expected to shrink still further. While there are excellent economic reasons behind this

process, clearly nuclear deterrence has already to a considerable extent taken the place of those forces in at least one role, namely that of guaranteeing the state's existence against an all out, all or nothing, war of destruction. Prime minister Shamir shortly before the Gulf War threatened "awesome and terrible retaliation" in case of an Iraqi attempt to use chemical weapons against Israel;(135) if this was a slip of the tongue, then it was utterly uncharacteristic of the man. When the War broke out and Scud missiles were fired at Israel the Government apparently felt strong enough not to retaliate, and chief of staff Dan Shomron was reported as saying Israel would not be the first to use nuclear weapons.

5. The Arab Countries

As might be expected, the public revelations surrounding the existence of the Dimona reactor in December 1960 did not pass without extensive comment in the Arab countries. A detailed acount of these reactions is not called for in the present context; suffice it to say that the possibility that nuclear weapons in the hands of Israel would lead to the "freezing" of the conflict (and thus to the frustration of Arab hopes for the "liberation" of Palestine) was raised almost immediately by numerous Arab commentators in Lebanon, Jordan, and Iraq.(136) Beginning in 1965, hardly a day passed without the question being discussed by some Arab newspaper and/or broadcasting station. Among those who took note of the developing "Jewish threat" and discussed possible Arab reactions to it were some of the highest ranking personalities in the Arab world as it then was: including Egyptian prime minister Ali Sabri, Egyptian president of parliament Anuar Sadat, King Hussein of Jordan, Syrian president Za'in, and his foreign minister Ibrahim Mach'us.

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including not least the Palestinians, looked to him for leadership in regard to the Israeli problem.(137) For him to adopt the position that nuclear weapons would freeze the status quo was, politically impossible; instead, he seems to have operated along four courses in parallel. First, he sent his diplomatic representatives--among them his deputy, Field Marshal Abdel Hakim Amar--to talk to de Gaulle in Paris in order to garner as much information about the Israeli program as possible.(138) Next, he dispatched Anuar Sadat--at that time President of Egypt's National Assembly--to Washington in order to try and persuade the Johnson Administration to put pressure on Israel that would cause that program to be halted or at least delayed.(139) Third, speaking in public, Nasser on several occasions put it on record that Egypt would not simply take an Israeli bomb lying down but would launch a "preventive war" against it;(140) which position did no more than reflect resolutions officially passed at the Third Arab Summit Conference held at Casablanca in September 1965 and later endorsed by the Palestinian Revolutionary Council.(141) Fourth, he apparently tried to obtain nuclear weapons from the Soviet Union during his visit to Moscow in January 1966. Like everybody else who made the attempt before or since, the Egyptian leader was rebuffed. All he could get out of secretary of defense Alexander Grechko was a promise that the USSR would take "due care" of Egypt's interests.(142)

Just what role was played by the nuclear issue in the events leading to the June 1967 War is not known,(143) but the closer one looks at the few available facts the more likely it becomes that it did play a role. Towards the beginning of 1966, Nasser had apparently reached the conclusion that the Americans were either being deceived by the Israelis or trying to deceive him; also that, contrary to Washington's repeated assurances, Israel was about to build the bomb and obtain the delivery vehicles (Skyhawk aircraft) promised by the Johnson Administration.(144) By this time, the term "preventive war" had

turned into common currency all over the Arab world and everybody--the American State Department included(145)--knew what it stood for.(146) From the Egyptian leader's point of view it was now or never; the Syrian-Israeli clashes over the sources of the Jordan River must have come as a welcome pretext for action. Just as President Kennedy had twisted Khruschev's arm by blockading Cuba five years earlier, so Nasser's closing of the Straits of Tiran _may_ have been meant to force Israel to dismantle the reactor or, which is more likely, put it under international control. Just as the USAF had flown a reconnaissance mission over the missiles in Cuba, so the Egyptians on 17 May 1967 flew one over the Dimona reactor, causing anxiety in Israel.(147) The long and the short of it is, my studies of pre-1967 Arab statements have led me to suspect that there was a nuclear dimension to the crisis which both sides, each for its own reasons, chose to ignore in their subsequent public declarations.

The Six Day war ended in a catastrophic defeat for Egypt. Its position _vis a vis_ the rest of the Arab world was not dramatically altered, however, since any hope of eventually turning the tables on Israel still depended on what Cairo could and would do. The Egyptian media continued to discuss the question of the Israeli bomb;(148) however, gradually we can detect a new note that was to become of very great importance during the years leading up to the October 1973 War. Before 1967 the Egyptians were in no doubt that Israel was well on the road to acquire the bomb, or so their special envoys claimed in the ears of Paris, Washington, Moscow, and anybody else who would listen. Now that defeat seemed to demand positive action on their part in other to reverse the war's results, they changed their tune. Egyptian spokesmen from Nasser(149) and Vice President Sadat(150) down began to issue statements that Israel _might_ indeed be working on the bomb: however, it was claimed that any reports that she already possessed one--such as those printed in the _New York_

Times (151)--were no more than rumors spread by Jerusalem as part of a "psychological campaign" waged against the Arab states.(152) In taking this line the Egyptians were greatly helped by the fact that Israel, fearing American reactions, neither tested its bomb nor declared itself in possession of surface to surface missiles for delivering it. Israel's official policy of not being the first to introduce nuclear weapons into the Middle East, introduced by the Eshkol Government in order to calm down the Americans and subsequently adopted by Golda Meir, was now working against its originators. It allowed the Egyptians--and, presumably, the Syrians as well--to behave as if the enemy did not yet have the bomb.

To put it in a different way, there exists plentiful evidence that the Arabs during the years 1967-1973 were as well aware as anybody both of the developing Israeli nuclear threat and of its potential politico-strategic consequences.(153) After all, their media had discussed the problem almost continuously from 1961 on. It was also an Arab--the Lebanese Fuad Jabber, working in London--who published the very first full-length English language book on the subject in 1971;(154) nor did it take long before his work was translated into Arabic. The critical factor which permitted the October War to take place nevertheless consisted of the fact that Israel neither admitted the bomb's existence nor conducted a test. Considering that the powers that had previously gained access to nuclear weapons had all tested the bomb as soon as they got it, a policy of "nuclear ambiguity" represented a considerable innovation: nor, at that time, had it become quite clear that computer-simulations might substitute for an explosion. Thanks to brilliant thinking on the part of Anuar Sadat, the Arabs were presented with a "window of opportunity", however narrow. Through this window they leaped, launching a limited war a few miles into the occupied territories. However, so inclined to panic was Israel's government that even a limited war almost led to a

nuclear catastrophe. For Egypt at any rate, the evidence for all this is quite clear.

From November 1973 on, it is possible to discern two opposing currents in Egyptian opinion concerning the question of an Israeli bomb. At one end of the spectrum stood various high-ranking officials whom Sadat removed from office at one point or another: among them were ex vice-president Muhi a Din, ex-foreign minister Isma'il Fahmi, (resigned, 1977), ex-chief of staff Sa'ad a Din Shazli (dismissed, 1973), and ex-minister of information Mohammed Heikal (dismissed, 1970, and later arrested). All four had this in common that they regarded themselves as Nasser's faithful paladins. The first two implicitly, and the last two explicitly, were to end up by denouncing Sadat as part traitor, part buffoon, who had given up the struggle, surrendered to Israel, and abandoned the Arab cause. Denied access to the Egyptian media, all three tended to expound their views in the Jordanian, Lebanese, and Western press. In particular, Heikal--who moved from editorship of the daily Al Ahram to head the Egyptian Institute of Strategic Studies in Cairo--saw Israel's possession of the bomb and its delivery vehicle as a fait accompli .(155) The result was a dangerous "asymetry" in the Middle Eastern balance of forces; it would put Israel in a position to resist returning all the lands occupied in 1967, and it might even give her the necessary confidence to start another war against Egypt with the aim of restoring her lost dominance. Hence, it was imperative that the Egyptians on their part "get, buy, or steal" the bomb.

Though Israel did in fact evacuate the Sinai following the Camp David Agreements, Heikal and his associates--including another ex-chief of staff, Mohammed Sadiq--remained unrepentant.(156) Specifically, the Vanunu revelations concerning the Dimona reactor caused the question to be taken up once again by Egypt's left-wing, Nasserite, opposition parties. Their conclusion was that the revelations were intended as a warning; whether

wittingly or not, Vanunu had been a stalking horse for Israel's intelligence service, the fearsome Mossad.(157) The Arab world would never be free of the Israeli threat, nor would the consequences of Zionist aggression be finally eliminated, so long as only the latter possessed the bomb and its delivery vehicles. Ergo Egypt should develop them too, possibly with the aid of other Arab states which would foot the bill. This demand was repeated time after time in 1986-87.(158)

On the other side of the hill, official Egyptian spokesmen working first for Anuar Sadat and then for Hosni Mubarak did ther best not to see the Israeli bomb even when evidence concerning its existence was put under their very noses. The possibility that Egypt might launch her own large-scale nuclear program was seriously discussed during the last years of the Sadat presidency (1974-81) when there was also talk of the US selling power reactors; ultimately, however, it was rejected on ecological and financial grounds.(159) From President Sadat down, official Cairo began to issue warnings--which could also be read as desperate pleas--to Israel not to flaunt its nuclear deterrent in too provocative a manner, or else Egypt would be compelled to follow suit.(160) At the same time, and addressing domestic audiences, they came up with all kinds of excuses as to why the Israelis could not have the bomb; or, if they did have it, why this fact should not cause undue alarm either in Cairo or in other Arab capitals. Under Sadat, this line of thought was put forward by the Secretary of State for Foreign Affairs, Butrus Ghalli.(161) Later its most prominent advocate was none other than Mubarak's minister of defense, Abdul Halim Abu Azal. In a series of interviews, Azal argued that the bomb had not been tested; or, if it had been tested, that only a small number might be available (this, in the teeth of the 1986 Vanunu revelations which he explicitly denied!). He even said he believed Israel's leaders when they said their country did not possess the

bomb;(162) which surely earns him first prize for naivite among all the world's leaders.

Mubarak, who had worked with Abu Azal since they were cadets together in the late forties, was finally forced to let him go after his involvement in an illegal attempt to obtain components for the Egyptian-Iraqi-Argentinian Condor Missile in the US was exposed. However, this has not prevented Cairo from sticking to its guns in spite of growing difficulties. As late as October 1988 the Egyptian Defense Ministry met a journalist's question concerning Israel's nuclear potential by flatly refusing to look facts in the face; instead it said that the question was irrelevant since Egypt had never been subjected to an Israeli nuclear threat.(163) In brief, the Egyptian government cannot afford to explicitly admit either that the Israeli nuclear threat played a role in limiting their own 1973 offensive, for to do so would be to question the value of the "victory" won by its army.(164) Nor, for fear of appearing defeatist, can it admit that the bomb influenced the Camp David Peace Agreements to any considerable extent.(165) On the other hand they long ago, and for reasons that have little to do with Israel, decided they do not want to make the effort involved in going nuclear. Hence the "ambiguous" line taken by Jerusalem suits their purpose very well; and it might almost be said that, in gingerly skirting the issue, the two countries are working hand in glove.(166)

Whereas Egypt has long been a position where she <u>could</u> develop the bomb if she decided to--or, which amounts to the same thing, if Israel compelled her to do so by flaunting its own nuclear deterrent--the same does not apply to Syria. Syria is a small, poor, backward country with hardly any nuclear infrastructure to speak of.(167) Accordingly, even before the June 1967 War spokesmen such as foreign minister Ibrahim Mahus used to take the line that, in the face of Western-supported Israeli technological superiority, the

correct method to Liquidate the Consequences of Zionist Aggression and Effect the Liberation of Palestine led through People's War of the kind so successfully waged in Algeria, Vietnam, and many other places.(168) The Syrians see--or so they claim--the 1967 Israeli attack on the Golan Heights as sheer unprovoked aggression against them; hence the 1973 War was no more than an attempt to regain lost territory. Even so, the initial losses taken by Israel during the War took the leadership in Tel Aviv by surprise and forced them to modify their thinking. In the future, so a detailed appreciation published by a Syrian intelligence officer in a Lebanese periodical soon after the end of hostilities, a desparate Israel might well resort to nuclear, chemical and biological weapons to offset its emerging conventional inferiority.(169)

Thus, the Syrian position after 1973 differed from the Egyptian one in that Asad did not bury his head into the sand. Instead of imitating the ostrich, Damascus almost immediately after the October War decided to look facts in the face. A realistic assessment was made that the Arab world, in spite of its much greater geographical size, population, and potential wealth, was in many ways almost as vulnerable to nuclear bombardment as Israel.(170) The fact that, given Israel's small size and the prevailing direction of the winds (Western), any Arab attempt to use nuclear weapons against her might very well lead to numerous casualties among the Arabs themselves was also clearly understood.(171)

Since an independent Arab nuclear force that could put an end to "Zionist Aggression" was nowhere in sight, the only solution Damascus could see was a Soviet nuclear guarantee.(172) Defense Minister Tlas at one time claimed that such a guarantee had, in fact, been given;(173) however, the final draft of the Friendship Treaty signed between the two countries in October 1986 seems to have come as a disappointment to Asad, and almost certainly did not include

anything remotely like an explicit guarantee of this sort.(174) Be this as it may, when Israeli forces launched a massive invasion of Lebanon in June 1982 the Soviet Union's failed to lift a finger in Syria's support, dispelling any illusion about aid coming from that quarter. President Asad was by no means the first Arab statesman to try and buy the bomb or ask for nuclear assurances.(175) He was merely the last one who failed to obtain it.

From late 1982 on, Syrian attempts to deal with the Israeli nuclear threat, if only on the declaratory level, evolved along two separate lines. First, Damascus with limited Soviet--later, Chinese and North Korean--help tried to achieve so-called "strategic parity"; to this end the conventional armed forces were greatly strengthened and a "poor man's deterrent" was acquired in the form of surfce to surface missiles carrying chemical warheads.(176) Second, there was a return to the old "people's war" line;(177) this became particularly clear after the detente in East-West relations that began to take place from 1987 on put an end to any hopes for Soviet support. In speech after speech, Asad himself--taking his cue from the Ba'ath ideologue in chief, Abd'ala al Akhmar(178)--referred to the "sophisticated new weapons" in the hands of Israel and promised that, in the end, they would be overcome by the struggling Arab masses.(179) Meanwhile events in Lebanon, where Syrians and Israelis are engaged in what amounts to de facto cooperation against the PLO, seem to confirm that Damascus has come very close to giving up the idea of another full scale conventional war against Israel. In part, this may be because the goal of regaining the Golan Heights by peaceful means no longer appears utterly impossible--had he been willing to give way over the Palestinian issue, in fact, Asad almost certainly could have got the Golan on a silver platter. Against the background of the intifaca and the growing international concern to which it has given rise, moreover, even the idea of reversing the results of the 1967 "Aggression"

through people's war no longer sounds as irrealistic as it did even a few years ago.

Finally, Iraqi commentators have been discussing the problem of a nuclear Israel from 1961 on. They were among the very first to conclude that the result would be nuclear to freeze the Arab-Israeli conflict; hence to a situation which, from the Arab point of view, was unacceptable.(180) However, Iraq's position differs from from that of Egypt and Syria in two important ways. First, the country has a traditional--and very dangerous--enemy in the form of Iran against which it fought a major war in 1980-1988; even as these lines are being written in April 1991, the Iranians still support the Kurdish and Shi'ite separatists and are trying to foster opposition to the regime on the part of Shi'ite majority. Second, Iraq does not have a common border with Israel. This fact for many years enabled the government to avoid any contact with the Zionist state--even in the form of an official ceasefire--while at the same time making it possible to take a lukewarm position in regard to the Palestinian problem. In 1970, and again in 1982, Saddam Hussein himself--first as vice president, then as president--explained that the Palestinian cause was not so dear to the Iraqi people's heart as to save the Palestinians the need to look after themselves. This was one element in the developing conflict between him and the Ba'ath Party founder, Michel Aflaq, who finally decided to leave the country in protest.(181)

Saddam, however, also saw himself and his country as potential leaders of the Arab world. His long-term goal was to avenge the humiliations suffered at the hands of colonialism during the nineteenth and twentieth centuries and restore the kind of greatness which the Arabs had known during the early Middle Ages.(182) Harking to the days of Salah A Din and even to those of the Babylonian King Nebuchednasser, the Iraqi Ba'ath assumed for itself the role of creating "a new Iraqi man" who, among a great many other marvellous

attributes, would aquire "mastery over modern science".(183) Much as India's nuclear program derived from a mixture of nationalist, global-strategic, and regional considerations, so the Iraqi effort has been driven by several different factors, of which the Israeli problem is only one.(184) Still, when everything is said and done no Arab country and no Arab statesman can aspire to lead the Arab world without at least pretending to do something about the Zionist problem. To this extent, Israel did figure in Iraq's nuclear calculations.

Until 1973 inclusive, Iraq had been content to leave leadership in the Arab-Israeli conflict--also in regard to its nuclear aspect--to Egypt.(185) Egypt, however, underwent a change of heart in the wake of the October War, relinquishing the Nasserite dream of pan-Arab leadership and all but withdrawing from the conflict. Since other Arab countries were perceived as either unable or unwilling to carry the torch, the burden was left for Iraq to assume almost by default. One can only suppose that, as he took on this role, Saddam's thinking resembled that of Egypt's Heikal. Without nuclear weapons, the Arab world would never be able to "confront" (a term he used several times during the eighties) Israel on equal terms; whereas a fifth war against her would be tantamount to suicide.(186) Based on this thinking, Iraq's nuclear program was greatly accelerated. A reactor was purchased from France, uranimum from Brazil, and hot cells from Italy.(187) To judge by the fact that the reactor in question was fueled by highly enriched (93%) uranium and that the Iraqis refused to substitute another fuel when this was offered to them, their principal and perhaps sole purpose was to manufacture the bomb. Nor does it appear very useful to speculate on what <u>might</u> have happened during the Iran-Iraq War had the Israelis not struck and destroyed Osiraq in June of 1981.(188)

Since the destruction of Osiraq, and particularly since the conclusion of

the Iran-Iraq War in the summer of 1988, Saddam's efforts to "confront" Israel have proceeded along two different lines. First, an attempt was made to rebuild the country's nuclear potential by negotiating the purchase of a new reactor of the same type as the one which had been destroyed.(189) When the French balked at this Baghdad, though it continued to deny any intention of building a bomb,(190) took a series of measures that pointed to the uranium line of development such as the covert purchase of centrifuges and blueprints for them.(191) However, the Iraqis must have known that progress, if any, would be slow, painful, and very expensive. Worried--or claiming to be worried(192)--about a possible repetition of the July 1981 attack, they also followed Syria's example and built up a large chemical arsenal as the poor man's deterrent.

Speaking on the occasion of the Ba'ath Party Day in April 1990, Saddam Hussein threatened "to burn half of Israel". However, when interviewed on French television three months later he made it perfectly clear that he well understood the mismatch between Israel's nuclear capability and his own country's chemical one.(193) Partly for this reason, partly because he had read many previous Iraqi publications on the subject, this author was able to predict that Iraq almost certainly would not make use of chemicals against Israel during the recent Gulf Crisis;(194) also, that all talk about Saddam authorizing his field commanders to do so on their own initiative was purely psychological warfare designed to create "the threat that leaves something to chance". The outcome has proved him right and demonstrated, if that were needed, that the Iraqis are as well aware of Israel's awesome capacity for nuclear retaliation as anybody else.

To sum up, in confronting Israeli nuclear power the Arab countries have faced a dilemma. To ignore its existence is perceived as too dangerous; whereas to admit it is to surrender any thought of Liberating Palestine by

force of arms, given that Arab statesmen and strategists have considered the problem for decades on end and understand its nature perfectly well. So far, the only country to tackle the problem head on has been Iraq. As part as its drive towards modernization and leadership, but also in connection with the Iranian threat, it twice tried to "confront" (the term habitually used by Saddam) Israel by developing its own independent nuclear program, and failed. The other principal Arab countries tried various approaches. Either they pretended the threat did not exist--which is the line followed by Egypt for at least fifteen, and possibly twenty years--or else they zig-zagged between "strategic parity" and "peoples' war" (Syria). All three approaches have this in common that the power of the bomb is well understood, the effectiveness of Israeli nuclear deterrence widely recognized, and the difficulty of using the bomb <u>against</u> Israel realized; even to the point that the Iraqi missiles fired in the general direction of the Negev during the Gulf War were later found to have carried concrete warheads.(195) As a result, and in spite of the occasional displays of rhetorical firework and brinkmanship, the last major Arab-Israeli War is already almost twenty years in the past. Moreover, during the last few years and months the Arab Armies--including even the formerly implacable Syrians--have been reduced to guarding Israel's borders against their own populations; an outcome which, significantly enough, was predicted by Heikal as early as 1976.(196)

C. The Transformation of War

The fact that the introduction of nuclear weapons by regional powers seems to have led to the demise of large scale war in the regions in question does not mean the disappearance of war as such. For many of these powers, the problem of "security" has always been determined as much by internal factors as by

external ones; even to the point where the use of the term in its ordinary, Western, meaning may itself be misleading.(197) Consequently there is every reason to believe that, where regional states are prevented by nuclear weapons from doing their own fighting, the social function of employing armed force for political ends will be taken over by organizations that are not states. As interstate war is replaced by intrastate war, the implications for the ability of existing political structures to assert their authority and even survive will be far reaching.

To start with China, where the events surrounding Tiananmen Square in 1989 (and the earlier student uprising of 1986) have been buried but not forgotten. A Communist regime, one of the world's oldest and last, is holding on to power by occasional brute force, day to day repression, and sheer inertia.(198) However, its leadership is aging and no viable alternative appears in sight. Whether the clique in Beijing can hold on for very long appears doubtful. Whether a regime which for decades on end has sought to eliminate all opposition and incorporate all groups into the existing power structure can reform itself is--especially in view of the experience of the Soviet Union and several other East European states--also doubtful.(199) Meanwhile the economic situation is promising only in comparison to that of the Soviet Union. The government's attempt to hold back population growth, on which everything else depends, is encountering popular resistance and has only worked up to a point.(200) Partly for this reason, partly because perceived political instability has slowed down the influx of foreign capital, the "four modernizations" promised by Deng Xiaoping in the late seventies have gone sour. The phenomenal growth rates which, during the first half of the eighties, were supposed to turn China into a modern country by the end of the century could not be sustained during the decade's second half; no longer is there any prospect of continental China drawing level with the more succcesful

Pacific rim countries--let alone Western industrial ones--by 2000 A.D. The impact of these developments has not been even. Currently the north is doing much worse than the south and inland areas are lagging behind coastal ones. As a result, tensions have arisen both among the regions themselves and between them and the center.(201)

In addition to its political and economic troubles, China is also the victim of powerful centrifugal forces which threaten to pull it apart in the long run. The country's transportation and communication network remains inadequate to permit effective central control of its immense population and extensive, complicated, terrain; with the result that provincial leaders are often able to do more or less as they please, and some of them have begun to behave much like the warlords of old.(202) Tibetan aspirations for independence, though muted for the moment, have not been supressed and can be expected to reassert themselves when the opportunity presents itself. China also contains large numbers of Moslem people of non Chinese stock in the northern and northeastern regions of the country. Encouraged by the success of the Afghanistani Muhajideen, and faced with the weakening of central control, they may one day attempt to reestablish the autonomous or semi autonomous political communities in which they lived until not so very long ago.(203) One might conclude by saying that, in view of the Soviet Union's eclipse and its own slowly growing nuclear arsenal, China's ability to withstand such major foreign threats as be directed against her appears more assured than at any time since 1840. On the other hand, over much of the country the potential for disorder, terrorism, and maybe even civil war seems excellent.

In India, such war is effectively under way already. Even more than China, India is an conglomeration of widely different peoples, languages, and religions. Some of these peoples have centuries-long traditions of hating

each other and fighting each other; in fact, their quarrels constituted one very important factor which twice permitted small groups of outsiders--first the Moguls, then the British--to take over and rule the subcontinent. The potential for intergroup conflict was well understood by the Western-educated elite which surrounded Gandhi and Nehru. Accordingly, they aimed at building independent India as a nondenominational, secular, democratic country whose official language is English. Again, however, the attempt seems to have gone sour.(204) Though the leadership's intentions may have been of the best, to non Hindis the Hindu character of Indian secularism was and still is glaringly evident. The limits of that secularism, as well as the political implications of the entire issue, were demonstrated once again in 1990 when attempts to reserve a percentage of civil service positions for low caste people met massive resistance and had to be abandoned.(205) Meanwhile India, though it has become the world's tenth largest industrial power in terms of assets, still maintains a per capita income of only $ 260 a year. As often happens during periods of rapid industrialization and liberalization, the result has been to widen the gulf between the two India's, that of the modern rich and that of the traditional poor; also, to create government corruption on a scale that can only be called sickening.(206)

If these problems were not bad enough, in Kashmir and the Punjab India is facing minorities which seem determined either to join Pakistan or to assert their own political independence. The failure of the 50,000 strong Indian Peacekeeping Force to quel the civil war in Sri Lanka and its withdrawal from that country in March 1990 have not gone unnoticed in the rest of the subcontinent; probably it helps account for the dramatic increase in violence that has recently taken place in abovementioned regions.(207) Attempts to solve these problems by political means are obstructed by the fact that both of the principal political powers--Congress on the one hand, Janata on the

other--are finding it hard to form a government without the support of right wing, fundamentalist, Hindu parties. As was the case in October 1990 when a quarter of a million troops had to be used to prevent a Hindu takeover of a Moslem mosque at Ayodhya, some of those parties' leaders seem determined to provoke the country's 140,000,000-strong Moslem minority by reviving century-old issues. Much more than in China, the net result of all these problems has been widespread disturbances, riots, and terrorism, including the assassination of a prime minister in May 1991. Such is the scale of these events that, had they taken place anywhere else, they would have merited the name of civil war.

Even more than India, Pakistan has been bedevilled by problems of integration and legitimacy right from the beginning of its history.(208) An artificial creation without firm roots in the consciousness of its inhabitants, Pakistan's original raison d'etre was to serve as a national home for Indian Moslems who could not resign themselves to living under the dominant Hindu culture. The civil war of 1971 which led to Bangla Desh breaking away was seen as undermining that claim, however, to say nothing of the fact that there are now probably more Moslems living in India than in Pakistan proper.(209) More paradoxical still, to be saddled with Islam as one's official state religion can be a problem in itself. Among the intellectual elite at any rate, it is widely recognized as an obstacle to economic modernization and progress.(210) Basically Pakistan is a poor country without abundant natural resources. Much of the population is backward, its loyalties going not to the government but to the traditional tribal institutions. Hence the authorities cannot afford to ingore or circumvent this problem in the way that some other, richer, Moslem countries have.

From this background stem many of the political difficulties, coups and

countercoups, that have dotted Pakistani history and prevented it from achieving the stable, civilian, democratic (albeit Islamic) regime to which it is officially committed. Time after time the politicians--who, from Bhutto and Zia down, were often not native Pakistanis but emigres from other parts of India--were perceived as failing to come to grips with the issues; time after time the army felt itself called-on to intervene, impose discipline, and save the country from disintegration.(211) The situation is further comlicated by ethnic rivarly between Punjabis--who fondly regard themselves as the "core" Pakistani people--and Sindis, to say nothing of separatist forces active in the west (Baluchistan) and the northwest (Pakhtoonistan). Pakistan and Iran have long cooperated in keeping down the Baluchis. However, the Pakhtoonistan issue is periodically exploited by whatever passes for the government of Afghanistan, which has never recognized the so-called Durand Line separating it from Pakistan.(212) In the past these problems have led to bloodshed up to, and including, the use of air strikes against rebellious villages in both provinces. They are likely to do so again in the future.

As compared to every one of the above conflicts, the scale of the fighting involved in the Palestinian uprising against Israeli rule has, so far, been miniscule.(213) This is not to belittle the intifada 's impact; on the contrary, in his own country the author was among the first to raise his voice concerning its consequences for the Israeli Army and, through it, Israeli society as a whole.(214) As of the time of writing everybody in Israel is stoning, knifing, riding-down, firebombing, and shooting everybody else. Apart from the fact that much of the violence--though by no means all--takes place between Jew and Arab, it is essentially random in character, and some of it is suicidal. The line between war and crime is becoming blurred, with the result that the security forces no longer know what to look for and have been hard-pressed to cope. The Palestinian uprising differs from those discussed

above in that it takes place in a country that has long been at the center of the world's interest and amidst some of the most intense media-coverage in the world. Operating against an opponent who is perceived as weak to the point of helplessness, the security forces stand condemned if they take strong measures and condemned if they don't. Criticized by both doves and hawks, let alone foreigners, they are showing signs of strain, even disintegration. To many on both sides of the ethnic divide, their ability to guarantee life and limb appears increasingly in doubt.

Like Pakistan, though for different reasons, Israel is a country where weapons are widely available. This makes it easy for disaffected groups to set up militias which then attempt to fill the gap left by the government forces. The clashes between the Israeli security apparatus and Arab terrorist organizations, as well as among those organizations themseles, are a matter of record. However, there have also been numerous attempts to set up Jewish self defense organizations, most of which have gone unreported. Wherever one looks, militias--official, semi official, and unofficial--are springing out of the ground. As of the time of writing, Arab attempts at self defense have been successful to the extent that the Israeli military can only enter Arab settlements in force whereas Israeli civilians can hardly enter them at all. Meanwhile, Jewish settlements in the occupied territories or close to them have set up their own well armed civil guards. With or without government permission they mount patrols, set up roadblocks, and occasionally send groups of marauders into neighboring Arab villages in response to some particularly vicious act of terrorism. Bands are also active in Jerusalem, beating up Arab workers and setting fire to the shops of their Jewish employers.(215) Against the background of mass immigration, record unemployment, and a deteriorating economic situation a war of all against all may be developing. Short of building a wall between Jew and Arab and preparing to negotiate, no solution

appears in sight.

Needless to say, nuclear weapons are not the cause of the conflicts in question, all of which date back decades if not centuries. Still, one factor which allows low intensity interastate war to take place and spread is the fundamental irrelevance of nuclear weapons to conflicts of this kind. So powerful are those weapons, and so far reaching their effects, that they can only be used by, and against, forces that are clearly marked, differentiated, and separated from each other and from the friendly civilian population; perferrably, indeed, when there is an ocean between them. Throughout the Cold War era, perhaps the most important factor which undermined the credibility of Western deterrence in the "Central" theater, was the realization that, if war broke out and became nuclear, the number of friendly German civilians killed might well equal or exceed that of Warsaw Pact casualties. Surely this is one explanation why, as of todate, the only nuclear weapons ever used were dropped on targets many thousands of miles away from the US homeland and fifteen hundred miles away from the nearest American base.

As we saw, regional powers are even more sensitive to this problem. If limited nuclear war theories between the superpowers were never able to gain credibility, how much more so in the case of countries whose territories are usually continguous to those of their principal enemies and where distances are much smaller. Should Pakistan and India start dropping nuclear weapons on each other--or if some Arab country uses nuclear weapons against Israel--then massive casualties and damage to precisely those people and those territories that are at issue will almost certainly result. Nor, given the nature of radiation and fallout, will the effects be limited to the war itself. Tragic though it was, the 1986 Chernobyl incident gave the world a salutary demonstration of what it might mean to have a nuclear weapon explode on one's territory:(216) depending on the device's power and a variety of other

circumstances, the result could be to contaminate the earth, polute water supplies, and render entire districts uninhabitable for extended periods. In brief, the very power that made nuclear weapons into the ultimate arbiter in warfare between territorial states--even to the point of bringing it to an end--also renders them irrelevant to warfare waged by organizations that do not have a recognizable territorial base. Much as the shadow of trees encourages the growth of mushrooms, so nuclear weapons permit such conflict to take place.

What is true of nuclear weapons is increasingly becoming true of conventional weapons also. Already during the fifties the US Army was voicing the fear that the Air Force with its swept wing, supersonic, jet aircraft that took half a country's width just to turn around was "flying away" from the ground forces, leaving them devoid of air support.(217) Much that happened to the Americans in Vietnam tended to confirm these claims; after all, an F-4 Phantom fighter bomber flying at 350 miles per hour is scarcely the appropriate platform from which to strike at a truck convoy driving over jungle tracks at night.(218) During the seventies, the existence of a problem was admitted to the extent that the Air Force developed a specialized aircraft, the A-10, for low level attack and the Army introduced helicopter gunships for the same purpose. However, the problem is not limited to the air force alone. Just as ancient warships and medieval knights specialized in fighting each other until they became almost useless for anything else,(219) so the most powerful modern weapon systems are optimized for combatting machines, not men. To combat machines, they have become critically dependent on electronic circuitry for detection, identification, tracking, and guidance. The greater this dependence, the less capable they are of discriminating friend from foe and enemy from innocent bystander.

The response of war, in the form of low intensity conflict, has been to

move into complicated environments, particularly such as are heavily inhabited (where the environment is relatively simple, as in Western Sahara, the regular forces have been able to do tolerably well). As guerrilla and terrorism took the place of large scale warfare, time after time it was found that the regular forces were almost helpless. In Algeria, South Vietnam, Afghanistan, and Lebanon--to mention but four cases out of several dozen--those forces enjoyed every technological advantage including, inter alia , the most complete command of the air anybody could wish for. Partly as a result, they were able to do what they pleased, go where they wanted, demolish any target they got into their sights, win every engagement they fought, and inflict multiple casualties for every one they suffered. For all that, they could not and did not prevail. The more powerful and modern the weapons at their disposal, the less useful they proved to be. Had they gone ahead and employed nuclear weapons--an option which, some allege,(220) was under consideration in connection with the siege of Khe San--then still most probably they would have failed.

Finally, one set of reasons why most modern regular armies have done so poorly against low intensity conflict is not technological but political and social. The early modern armies which, from about 1500 on, employed cannon and muskets to smash the feudal levies facing them did not belong to the nation--which hardly existed in any case--but to the king. Eating his bread and wearing his coat, they could be used to destroy his rivals both in- and out of the country indiscriminately. However, since 1792 the most important armed forces have come to be based on universal conscription or, at any rate, were considered--and considered themselves--national organizations. Therefore they could only be employed by national leaders, against national opponents, and with national ends in view. The very factor which optimized their ability to mobilize manpower and fight each other made it hard for them to be employed

at home; should such employment be too intensive, or last too long, then almost certainly it will end up by tearing them to pieces. This is another reason why, confronted by low intensity intrastate warfare, many of the most modern regular armed forces have proved themselves to be almost entirely useless. In regions where such warfare is on the rise those forces, and their weapons, may well be on their way out.

This is not to say that future war will be fought exclusively inside states. On the contrary, from the dawn of history civil war has always served as a fertile ground for outside intervention; either because some neighbor saw his opportunity or, equally likely, because one or more of the warring parties begged for intervention to take place.(221) In view of the risk involved--not least, the nuclear risk--such intervention is more likely than in the past to be covert at first. As has already happened both in South Asia and in the Middle East, governments will "express their sympathies" for the struggles of oppressed people on the other side of the frontier. Next, they will be "unable to prevent" some of their citizens from coming to the aid of those peoples. Such claims may or may not be made bona fide ; either way, the next step may be the loss of internal control. If the government of Lebanon (before the outbreak of Civil War in 1975) was able to turn a blind eye to PLO operations from its territory against Israel, equally Israel proved capable of setting up its own militia on Lebanese territory. If Pakistan can encourage guerrillas inside India, India can encourage guerrillas inside Pakistan ano, should the situation appear inviting, Tibet. Now warfare of this kind is unlikely to result in international borders being moved or redrawn, and the likelihood of the changes being recognized by the international community is even less. However, over time it can render them largely meaningless, causing sharp lines drawn on a map to be replaced by more or less ill defined "security zones" and no man's land.

d. Conclusions

As of 1991, fears lest nuclear proliferation to third world countries would lead to anarchy, destablilization and possibly nuclear war--which might in turn cestabilize the all important "central balance"--are some three decades old. Traditionally, as soon as each new country joins the nuclear club its leadership starts voicing their concern lest the next lot to do so will behave even less responsibly than they themselves have. Already in 1968-69, these fears led to the signing of the Non Proliferation Treaty. Designed by the three leading nuclear powers, its express purpose was to prevent other countries from obtaining weapons which they themselves already possessed and, some would say, had brandished in an unbelievably irresponsible manner. The fact that, under such circumstances, many of the more important developing countries in particular denounced the Treaty as discriminating and unfair need hardly cause surprise.

In fact, the evidence presented in this study points to a different conclusion. If only because the term "introducing nuclear weapons" may itself be ambiguous, the period of transition from reliance on conventional weapons to nuclear deterrence has often been rough; for all we know, the wish to strike before an opponent acquired nuclear weapons may have led (or at any rate contributed) to at least two full scale armed conflicts, i.e the 1965 Indo-Pakistani War and the 1967 Arab-Israeli War. In addition, the wish to preempt a state from acquiring nuclear weapons has been responsible for one full scale airbrone strike against a reactor under construction (1981) and probably played a role in the decision to launch at least one war (1991). The instability inherent in the period of transition ("the risk period", to borrow a phrase coined by the German Admiral von Tirpitz in 1897) is recognized by

the governments of regional powers. It is one major reason why so many of them have denied that their (acknowledged) nuclear programs were of a military character.

Once the existence of nuclear weapons came to be recoganized as a fait accompli , however, a kind of chemical change seems to take place in international relations: in every case the result has been the demise of large scale, interstate war. Either because they have vowed not to do so (as in the case of China) or because they professedly do not possess such weapons (as in the case of Israel, India, and Pakistan), no regional power has ever openly developed a doctrine of massive retaliation or threatened another with nuclear bombardment. On the military-technical level, just one case is known in which such a country (Israel in 1973) may have put its nuclear forces on alert. Furthermore, no third world country awovedly posssess a bomber force loaded with nuclear weapons on constant airborne alert. No third world country (except, one supposes, China) has submarines roaming the oceans with hundreds upon hundreds of nuclear weapons on board; vessels which cannot be kept in radio contact at all times and whose captains are therefore authorized to fire, under certain circumstances, on their own initiative and without waiting for orders.

Tocate, in every third world region where nuclear weapons have been introduced, overtly or even covertly, the ultimate outcome has been greater, not lesser, stability in relations between states. As of the time of writing, the last full scale war involving either Israel and her neighbors or the China-India-Pakistan triangle is already almost twenty years in the past. As of the time of writing, too, the main threat to peace in regions such as South Asia and the countries around Israel originates less in the squabbles of governments than in the possibility--a very real one, in some cases--that they will lose control of their own populations. Partly in order to counter this

possibility, the armed forces of Pakistan, Jordan, Egypt, and even Syria are even now being transformed into police organizations. Over the last few years one of their main functions has come to consist of guarding the borders of India and Israel, respectively, against attempts by their own people to cross to the other side and stir up trouble on the other side. In South Asia, the introduction of nuclear weapons has pushed war under the carpet. In the Middle East, it has now been fully a decade since the most intense conflicts have shifted to an area--the Gulf--where nuclear weapons have not yet been introduced.

Needless to say, none of this represents an absolute guarantee for the future. However, as experience accumulates it is becoming more evident that fears concerning the irrationality of non-Western leaders are greatly exaggerated; in fact, that if there is <u>any</u> factor capable of making even the most mentally disturbed Third World leader behave in a more or less responsible manner it is the knowledge that, in case of war, his country (and his person) made be turned into targets for nuclear weapons. <u>Pace</u> most Western strategists, todate this is true almost regardless of the size of the arsenal at their disposal, the nature of the available delivery-vehicles, the sophistication of the command and control arrangements, and the kind of communication that they may or may not have with their neighbors. Insofar as they refuse to take cognizance of these facts, it is the Western-generated analyses that are self seeking (since their goal is to perpetuate the existing global power structrue), enthnocentric, racist, and simply wrong. At present, everything indicates that the greatest likelihood of third world states resorting to nuclear weapons will come about if, and when, they cease to be states.

Postscript: Wider Horizons

Forty-six years after the invention of nuclear weapons, no "central" nuclear war has broken out and nuclear competition between the superpowers has ended up by abolishing itself. Twenty-seven years after the first regional power exploded a nuclear device, large scale warfare in regions where nuclear weapons have been introduced--even covertly, even in small numbers, even without sophisticated delivery vehicles, C 3 I arrangements, and doctrines for their use--also seems on the way out. Thus, experience seems to show that wherever nuclear states confront each other the conventional forces at their disposal end up by becoming impotent, indeed almost irrelevant; conversely, it has been realized for some time that any state which possesses the industrial and scientific infrastructure necessary for building and maintaining large conventional forces should also be capable of acquiring nuclear weapons. These facts do not mean the advent of peace on earth, let alone the end of history. Rather, they probably mean that large scale interstate war will be replaced by other forms of armed conflict; forms which may end up by causing strategy, armed forces as we know them today, and even the state itself to wither away.

If this scenario proves correct, then strategy in the classical sense will disappear. Like conventional war, for which it was designed, strategy has been caught in a vise between nuclear weapons on the one hand and LIC on the other. Whether in Europe or in the other theaters that we have studied, nuclear weapons are foreclosing the large, open spaces that strategy needs to operate. Moreover, those weapons work against geographical distinctions of any kind: in the future, if armed forces--and, most probably, the political units by whom they are fielded--are to survive and fight in earnest they will have to become intermingled both with each other and with the civilian

population. The result will be to push war into complex environments, particularly such as are heavily inhabited. Foe will often be indistinguishable from friend, combatant from noncombatant, and all four from innocent bystanders. The distinction between "front" and "rear" will disappear. Battles will be replaced by skirmishes, ambushes, bombings, and massacres. Instead of lines of communication there will be short, covert approaches of a temporary nature; instead of bases, hideouts and dumps; instead of continuous, clearly marked frontiers, scattered roadblocks and isolated strongholds. As used to be the case in Europe between the fall of the Roman Empire and the end of the Thirty Years' War, strategy's real aim will scarcely be capable of geographic expression. Rather, it will consist of the kind of population-control achieved by a mixture of propaganda, initimidation, and terror.

As the threat of nuclear weapons causes large scale strategy to re-merge with tactics on the one hand and politics on the other, warfare itself will consist partly, perhaps even mainly, of subversion. This is because future armed forces, unlike those of the recent past, will no longer be able to take national loyalties more or less for granted. Nor, probably, will they be able to control their members in to the same extent as do state-run armed forces with their uniforms, regular pay (itself made possible by the fact that the state <u>manufactures</u> its own "legal tender"), extensive welfare systems, and powerful counterintelligence services. As has already happened in any number of places throughout the Third World, the boundaries separating armed forces from governments on the one hand, and civilians on the other, will break down. Once this happens bombings, assassination, hostage-taking, bribery, subversion, sedition, treachery, and shifting allegiances by individuals, units, and entire social groups will resume as important a place in war as they have often done in the past.

The demise of large scale war and its replacement by sporadic, small scale, low intensity conflict will cause regular armed forces themselves to change form, shrink in size, and wither away. As they do so, much of the day to day burden of defending society against the threat of LIC will be taken out of their hands and transferred to the booming security business; and indeed one day the organizations that comprise that business may, like the condotieri of old, themselves take over the state or whatever is left of it. Meanwhile, the need to combat LIC will cause regular forces to degenerate into police forces or, in case the struggle lasts for very long, mere armed gangs. Armies will be replaced by militias, bureaucratic organizations by charismatic ones endlessly bargaining with each other, merging into each other, and splitting away from each other. Modern professionalism as a driving power will disappear in favor of fanatical, ideologically inspired, loyalties on the one hand and petty economic motives on the other. Whereas most present-day militias still put on something resembling a uniform when it suits their purposes, over time its place will probably be taken by mere insignia in the shape of sashes, armbands, etc. In many of the countries examined in this study, these processes are already well underway.

A special chapter in the conduct of future regional low-intensity war is formed by the weapons it will employ. If countless past examples of such war have any lesson to offer, surely it is that the most powerful, most advanced weapons have been all but irrelevant to them. Any good they can do is more than balanced by the damage inflicted on the environment and their own insatiable demands for supply, maintenance, and repair. Therefore they are probably doomed to disappear; and the same also applies to major military-technological research and development as we have known it since the industrial revolution. Whether by deliberate scrapping or by sheer neglect, the most important weapons will become less, rather than more, sophisticated

and expensive. The role of R&D will be transformed. It will focus on gadgets such as tamper-proof magnetic identification cards (to be implanted, ultimately, into each individual?), surveillance cameras, monitoring machines, listening devices, and explosives capable of passing them undetected; to say nothing of poisoned umbrellas and booby-traps of every kind. All these gadgets are more like George Orwell's telescreen--itself a real technical possibility--than like today's tanks, armored fighting vehicles, artillery, missiles, and aircraft.

Insofar as low intensity conflict and the organizations that wage it will rob the state of its monopoly over violence--one of its principal characteristics--ultimately they may bring about its destruction. After all, the state is a recent invention. Originating in seventeenth century Europe, it spread in all directions until finally after 1945 every exotic people anywhere suddenly felt the need to have one of its own. However, recent developments make it clear that the soil to which it spread has not always been fertile. In many places it failed to take strong roots, and has started disintegrating even before it became properly established. This is not to say that civil war is likely to break out in all countries at once. The process whereby the state is destroyed, and its place taken by organizations of a different type, will be gradual, uneven, and spasmodic. To risk a guess, among the first to feel the impact will be many of the countries dealt with in this study, viz. China, India, Pakistan, and some Middle Eastern States such as Iraq and--should she refuse to surrender the territories--Israel. Next on the list of candidates are the Soviet Union and certain other former Communist countries such as Yugoslavia and Albania. In them, once again, the process of dissolution has already begun.

If only because they have strong traditions to fall back on, some of the oldest states, particularly Japan and those of Western Europe, may be able to

resist the longest. Japan is especially fortunate because it is isolated, exceptionally homogeneous, and, at present, very rich; yet even today Japanese politicians shudder at the possibility that "huddled, teeming, masses" from poor countries in the region may start arriving on their shores. West European states are likely to see their sovereignty undermined as much from above, at the hands of international organizations, as from below. Should the steady movement towards European unification that has been underway since 1949 proceed, then whatever form its organization assumes almost certainly will not resemble a "state" as the term is understood today. A continent-wide community whose sole purpose in life is to increase per capita GNP will hardly be able to count on people's undivided loyalty. Integration will probably cause--indeed is already causing--regional pressures for independence on the part of Basques, Catalans, Corsicans, Normans, Scots, and a host of other peoples to grow; the first to succeed will act as a battering-ram for the rest. Most likely not all these movements will employ violence to gain their ends, and in some cases violence may be unnecessary as the state recoils before their demands. Still, and also in view of the growing numbers of resident, non-European, non-Christian, people, in the long run a fair chance exists that low intensity conflict will break out and sweep at least parts of the continent.

As far as the US is concerned, the impact of these developments is mixed. Faced by the disintegration of some of its prinicplal potential rivals, and provided it can give up a long tradition of intervening in other people's quarrels , the American homeland should be more secure than at any time since 1945. On the other hand, the US itself is a large, multiracial society where weapons are widely available and which has a tradition of internal violence second to none. During most of their history abundant natural resources, an open frontier and--later--global expansion enabled Americans to raise their

standards of living almost continuously. As they did so, from time to time they fought a war in which their aggressions found an outlet. However, all three factors no longer exist. The frontier was closed long ago. America's economic viability has been declining since about 1970. Partly as a result, so has its ability to dominate the rest of the world, a process which not even the recent "victory" over Iraq is likely to halt. As it took running faster and faster just to stay in place, social tensions have mounted and so has escapism--the use of drugs--until President Reagan called it "our number one war". America's current economic decline, which during the last two decades has caused one in every four employed Americans to experience downward social mobility, must be halted. Alternatively, the day may come when the rampant crime of New York and Washington D.C may develop into LIC by coalescing along racial, religious, social, and political lines, and run completely out of control.

No more than Froissart in the fourteenth century could foresee the replacemet of feudal princedoms by the modern state, can we today foresee what new order will arise after the combination of nuclear weapons and low intensity warfare lead to the latter's collapse. However, the fact that already at present none of perhaps two dozen armed conflicts being fought all over the planet involves a state on both sides may permit an educated guess. In much of the developing world, including specifically the two regions considered in this study, the best analogy may be the robber barons who infested Europe during the early modern period, or else the vast feudal organizations which warred against each other in sixteenth century Japan. In North America and Western Europe future warmaking entities will probably resemble the Assassins; the group which, motivated by religion and allegedly supporting itself on drugs, terrorized the medieval Middle East for two centuries. Whatever their exact form, the entities in question almost

certainly will not be able to dominate large, continuous, clearly delineated, tracts of territory. If only for that reason, they will not be "sovereign" in the sense that modern states are.

The most important single demand that any political community must meet is the demand for protection. No community which cannot safeguard the lives of its members, subjects, citizens, comrades, brothers, or whatever they are called is likely either to command their loyalty or to survive for very long. The opposite is also correct: any community able and, which is even more important, willing to exert itself to protect its members' lives will be capable of calling on those members' loyalty even to the point where they are prepared to die on its behalf. The early modern state owed its rise largely to its military effectiveness vis a vis other warmaking organizations. However, not only are present-day states incapable of defending their citizens against nuclear weapons, but in many cases their ability to offer protection from internal or external LIC is also in doubt. If the state takes on low intensity conflict in earnest, then it must win quickly and decisively. If it does not, or if the fighting becomes very protracted, then probably it does not have a future in front of it. The military side of the story apart, there are many other reasons why the modern state may be approaching the end of its historical career; however, to spell them out would require a separate book.

Notes

Introduction

1. See J. Keegan and A. Wheatcroft, Zones of Conflict: an Atlas of Future Wars (New York, N.Y., Simon and Schuster, 1986).

2. E.g International Institute of Strategic Studies ed., The Military Balance 1989-1990 (London, 1989), pp. 158-60, 170-1, referring to India and Pakistan; and Jafee Center for Strategic Studies ed., The Middle East Military Balance 1987-88 (Tel Aviv, JCSS, 1988).

3. This, in fact, is an assumption often made in the literature: see for example F. Barnaby, The Invisible Bomb: the Nuclear Arms Race in the Middle East (London, Tauris & Co., 1989) p. 55ff.

Chapter I

1. For the motives of those who built the bomb see R. Rhodes, The Making of the Atomic Bomb (New York, Simon & Schuster, 1982), particularly p. 357 ff.

2. See above all C. Schmitt, The Concept of the Political (Reading, Mass., Harvard University Press, 1960).

3. On primitive "political" organization see e.g E. R. Service, Origins of the State and Civilization, the Process of Cultural Evolution (New York, W. W. Norton, 1975) pp. 47-103. The best study of primitive war is J. H. Turney-High, Primitive War, its Practice and Concepts (Columbia, S.C., University of South Carolina Press, 1971).

4. See M. Weber, General Economic History (London, Allen & Unwin, 1923), pp. 58-9. Even as late as 1600 Europeans spoke of the Ottoman Emperor as "the Grand Turk", a term by which they meant that, as a patrimonial ruler, he was

free from the feudal restrictions that surrounded Western ones.

5. Though our modern "empire" comes from imperium the original Latin term meant "authority" or "domination". See R. Koebner, Empire (Cambridge, Cambridge University Press, 1961) chapter1.

6. For details see e.g J. Barnie, War in Medieval Society, Social Values and the Hundred Years War (London, Weidenfeld and Nicolson, 1974).

7. See N. Rubinstein, "Notes on the Word Stato in Florence before Machiavelli", in R. G. Rowe and W. K. Ferguson eds., Florilegium Historiale, Essays Presented to Wallace K. Ferguson (Toronto, University of Toronto Press, 1971) pp. 313-26; also B. Guennee, States and Rulers in Later Medieval Europe (Oxford, Basil Blackwell, 1985) pp. 4-6.

8. A good short summary of medieval political theory, particularly that of Thomas Aquinas, may be found in G. H. Sabine, A History of Political Theory (London, 3rd ed., 1964) pp. 224-330.

9. See e.g J. R. Strayer, On the Medieval Origins of the Modern State (Princeton, N.J., Princeton University Press, 1970) p. 77ff; also J. W. Shennan, The Origins of the Modern European State, 1450-1725 (London, Hutchinson, 1974) p. 24ff.

10. For the rise of political theory see G. Oestreich, Neostoicism and the Origins of the Modern State (London, Cambridge University Press, 1982) pp. 92-3, 97ff. For the development of the idea that the ruler was the servant of the state, instead of vice versa , see F. Meinecke, Machiavellism; the Doctrine of Raison d'Etat and its Place in Modern History (London, Routledge & Kegan Paul, 1957) p. 305ff.

11. For an excellent discussion of Bodin see Sabine, op . cit ., p. 402ff.

12. Lipsius is the subject of Oestreich's monograph (see footnote No. 10 above).

13. See Th. Hobbes, Leviathan (London, J. M. Dent, 1947 ed.), particularly

chapters 14 to 17. Hobbes' contemporary Baruch Spinoza put it even more bluntly: according to him, the object of the state is none other than peace and security of life. See Ttractatus Theologico-Politicus (Leiden, Brill, 1979), p. 234.

14. For the elevation of the state from an instrument into an ideal see above all J. L. Talmon, The Origins of Totalitarian Democracy (London, Secker and Warburg, 1952) pp. 38-49; as well as E. Cassirer, The Myth of the State (New Haven, Ct., Yale University Press, 1946) p. 254ff, and Meinecke, op . cit ., p. 350ff.

15. See for example K. Marx and F. Engels, The German Ideology (London, Lawrence & Wisehart, 1938), particularly pp. 58-62 and 68-9; also D. McLellan, The Thought of Karl Marx (London, MacMillan, 1971) pp. 179-95..

16. For an impressive summary of these developments see K. Polanyi, The Great Transformation (London, Golancz, 1946), particularly chapter 1.

17. For example, French authorities in 1914 had counted on 5-13% refusal to respond to mobilization, but found that the actual figure was only 1.5%. See M. Ferro, The Great War (London, Routledge, 1973) p. 8.

18. Those that come to mind most are the Hellenistic and Roman Imperial armies which, for this reason, often served early moderen ones as their model. See on this

19. Thus, in the book of Deutronomy , "member of the host" (yotse tsava) is synonymous with adult male member of the people. The Latin term for "people", populus ,originally could also mean "army".

20. The best modern account of the innter workings of a mercenary army remains G. Parker, The Army of Flanders and the Spanish Road (London, Cambridge University Press, 1972), particularly chapters 1 and 6.

21. Quoted in Oestreich, op . cit ., p. 52. At that time the total forces of a first rate power such as Spain could easily number 100,000 or more.

22. For the rise of the military commissionaries and their role in the establishment of early modern administrative structures see O. Hintze, "The Commissary and his Significance in General History; a Comparative Study", in F. Gilbert ed., The Historical Essays of Otto Hintze , (New York, Oxford University Press, 1975) pp. 267-302.

23. See G. Mosse ed., Police Forces in History ,(London, Sage, 1975).

24. One is reminded of Elizabeth I's remark that, while she knew she had the weak body of a woman, she possessed the spirit of a king. For the evolution of command and its separation from government see M. van Creveld, The Training of Officers; from Military Professionalism to Irrelevance (New York, The Free Press, 1990) pp. 7-16.

25. For the creation of the most important of these ministries see C. Rousset, Histoire de Louvois (Paris, Didier, 1862).

26. For the career of one famous military administrator and his work in carrying out all these different functions see H. de Nanteuil, Daru et l'Administration militarie sous la Revolution et l"Empire (Paris, Peyronnet & Cie, 1966).

27. On War (M. Howard and P. Paret eds., Princeton, N.J., Princeton University Press, 1976), pp. 585-6.

28. G. Gong, The Standard of "Civilization" in International Society (Oxford, Clarendon Press, 1984) pp. 74-6.

29. For a good summary of the international conferences which took place between 1864 (St. Petersburg) and 1907 (the Second Hague Conference) see

30. See on this episode A. Harris, Bomber Offensive)London, Collin, 1947) p. 268; also C. Messenger, "Bomber" Harris and the Strategic Bombing Offensive, 1939-1945 (New York, St. Martin's 1984) p. 212.

31. See above all E. Luttwak, The Logic of War and Peace (Cambridge, Mass., Belknap Press, 1987) chapter 1. The meaning which Luttwak atache to strategy

is, however, more reminiscent of Thomas Schelling than of Clausewitz.

32. For a concise history of strategic terminology see Clausewitz, On War , pp. 133ff; also M. van Creveld, The Transformation of War (New York, The Free Press, 1991) pp. 95ff.

33. For Clausewitz's dismissal of the significance of pre-1648 warfare see On War , pp. 173-4. Another very good example is B. H. Liddell Hart, Strategy (New York, Praeger, 1967) which ignores anything before Alexander as well as the entire period from 500 to 1500 A.D.

34. Another way of putting the matter would be to say that most Greek wars were, at the same time, civil wars. On the interaction of "politics" and "strategy" in the ancient world see above all Y. Garlan, War in the Ancient World (London, Chatto & Windus, 1975), chapter 1.

35. Quoted in E. Leach, S. N. Mukherjee, and J. Ward eds., Feudalism: Comparative Studies (Sydney, Sydney Association for Studies in Society and Culture, 1985) p. 106.

36. See the calculations in D. Engels, Alexander the Great and the Logistics of the Macedonian Army (Berkeley, Ca., University of California Press, 1978), p. 11ff.

37. For a modern account of the way things were done see G. Perjes, "Army Provisioning, Logistics and Strategy in the Second Half of the 17th Century", Acta Historica Academiae Scientarium Hungaricae , No. 16; for a contemporary example A. Duyck, Journaal (I. Mueller ed., The Hague, Nijhoff, 1886) p. 384ff.

38. A partial exception to this rule was formed by siege warfare; see M. van Creveld, Supplying War, Logistics from Wallesnstein to Patton (London, Cambridge University Press, 1977) pp. 23-6.

39. One is reminded of Napoleon's saying that of the three obstacles facing the movements of armies, i.e rivers, mountains, and deserts, the last-named

were the worst. See Correspondance de Napoleon I ,(Paris, Plon, 1868) vol. 5, No. 3928, pp. 291-2.

40. On War , pp. 285, 297.

41. Fredericus Rex, Werke , ed. G.B. Holz, vol. 4, Militaerische Schriften (Berlin, Mittler, 1913) chapter 18.

42. F. E. Adcock, The Greek and Macedonian Art of War (Berkely, University of California Press, 1957) p. 82.

43. M. van Creveld, Command in War (Cambridge, Mass., Harvard University Press, 1985) pp. 41-55; also idem , The Training of Officers; from Military Professionalism to Irrelevance (New York, Free Press, 1990) p. xx ff.

44. See A. Gatt, Clausewitz and the Enlightenment (Oxford, Oxford University Press, 1989) p. 41-2. The first English use, incidentally, was in 1815.

45. See W. Laqueur, The Guerrilla Reader (New York, Meridian, 1977) pp. 13-29. Austria was the first country to raise troops (the Pandurs) specifically for irregular warfare, and its example was followed by others.

46. Correspondance de Napoleon I , vol. xi, No. 9392, p. 336.

47. Traite des grandes operations militaires (Paris, Dumaine, 1804-16).

48. On Buelow see Gatt, op . cit ., pp. 79-94. Besides him, the most important writers of the period were Venturinus, Berenhorst, Scharnhorst, Jomini, and, of course, Clausewitz. In On War , p. 133ff., Clausewitz himself gives a good summary of the origins of the debate; for subsequent developments see above all W. Erfurt, Die Vernichtungsssieg (Berlin, Mittler, 1939).

49. In the American Civil War the two types of command can be seen side by side. On the side of the Union Grant held a field command in addition to acting as commander in chief, which compelled him to make use of the telegraph in order to direct operations over half a continent. On the Confederate side, since the only man responsible for the war as a whole was Jefferson Davies, field commanders such as Lee operated very much in the Napoleonic style. See

E. Hagerman, The American Civil War and the Origins of Modern Warfare; Ideas, Organization, and Field Command (Bloomington and Indiana, Indiana University Press, 1989) pp. 126ff., 264-5

50. This study cannot trace the evolution of naval strategy. However, it should be noted that Mahan was familiar with Jomini as befits the son of the man who reorganized West Point. Accordingly, the first thing he has to say is that lines of communication, also known as shipping lanes, play as important a role at sea as they do on land; and indeed The Influence of Seapower on History can be read simply as an attempt to apply Jomini's precepts to naval strategy too.

51. Comand in War , pp. 190-4. Radio, however, did reverse the trend by which commanders operated farther and farther away from the front, enabling them to locate their headquarters well in front as Guderian, Rommel, and Patton e.g did.

52. Supplying War , particularly pp. 234-6.

53. For the link between the state and modernity see most recently S. Toulmin, Cosmopolis, the Hidden Agenda of Modernity (New York, Free Press, 1990), particularly pp. 89-98, 139-45.

Chapter II.

1. The first thing President Truman did after the war's end was to terminate lend-lease, thus effectively severing the Anglo-American alliance that formed the tightest of these coalitions. See H. S. Truman, Memoirs , vol. I: The Years of Decision (Garden City, N. Y., Doubleday, 1955) pp. 227-8. On the other side of the hill, the Axis Powers never even achieved unified command.

2. For the planning of strategy during the last months of the war against Japan see G. Alperovitz, Atomic Diplomacy (Harmondsworth, Penguin Books,

1985).

3. For a modern "stategic" appreciation of Thucydides, and the contribution he makes to understanding today's world, see M. Howard, The Causes of Wars (Cambridge, Ma., Harvard University Press, 1984) chapter I; also D. Gast, "Thucycdides and Neorealism", International Studies Quarterly , 33, No. 3, March 1989, pp. 3-28.

4. On the shaping of the postwar world H. Feis, Churchill, Roosevelt, Stalin, the War They Waged and the Peace They Sought (Princeton, N.J., Princeton University Press, 1967) remains standard.

5. On the origins of containment see J. L. Gaddis, "Containment: a Reassessment", Foreign Affairs , 55, July 1977, pp. 873-87; also R. E. Osgood, Limited War Revisited (Boulder, Co., Westview Press, 1979) p. 87ff.

6. This strategy already dates back to Lenin: see "Draft of Thesis on the National and Colonial Questions at the Second Congress of the Communist International" (1920), Selected Works (London, Lawrence & Wishart, 1946) vol. 10 pp. 231-8

7. E.g J. Hackett and others, The Third World War (London, Sphere Books, 1978); and T. Clancy, Red Storm Rising (New York, Putnam, 1986). Both, incidentally, represent World War III as a foreshortened repetition of World War II, and both come to an end when nuclear weapons enter the scene.

8. See P. Kennedy, The Rise and Fall of the Great Powers, Economic Change and Military Conflict from 1500 to 2000 (New York, Vintage Books, 1987), particularly chapter 7.

9. Government Publishing Burea, Falsificators of History (Moscow, 1948) is a good example of a contemporary Soviet view of the events leading to World War II. Whether or not the Western powers were serious in their offer of an alliance in 1939 remains moot; see A. J. P. Taylor, Europe, Grandeur and Decline (Harmondsworth, 1950) pp. 259-69.

10. One of the earliest analyses calling attention to the effect of military spending on the Soviet economy was by H. Block, "The Economic Basis of Soviet Power", appendix I to E. Luttwak, The Grand Strategy of the Soviet Empire (New York, St. Martin's Press, 1983) pp. 19-75.

11. On the question of a Soviet "military industrial complex" and its ability to influence Soviet policy see D. Holloway, The Soviet Union and the Arms Race (New Haven, Ct., Yale University Press, 1983) pp. 156-60.

12. Speech printed in New York Times , 18 January 1961.

13. George Kennan, whose understanding of Stalin was second to that of no Westerner, deemed him perfectly capable of using nuclear weapons if he had thought any advantage would result therefrom: Memoirs (Boston, Ma., Little Brown, 1967) p. 291, quoting the famous "long telegram" of 30 September 1945.

14. Khruschev Remembers (trans. S. Talbot, London, Sphere Books, 1971), pp. 430-1.

15. See for example McG. Bundy, Danger and Survival: Choices about the Bbomb in the First Fifty Years (New York, Random House, 1988) particularly p. 584ff.

16. See W. L/ O'Neill, Coming Part: an Informal History of America in the 1960s (New York, Quadrngle Books, 1971) pp. 67-73.

17. A. Rhodes, The Making of the Atomic Bomb (New York, Simon & Schuster, 1988) p. 690.

18. E.g B. Brodie, The Absolute Weapon ((New York, Coumbia University Press, 1946) pp. 22-69.

19. See L.Freedman, The Evolution of Nuclear Strategy (New York, St. Martin's Press, 1981) p. 22ff. During the fifites, writing articles that "proved" the continued need for conventional forces in the nuclear age was a fool proof method for Army and Navy officers to be nominated for a prize.

20. See e.g the Noble-Prize winning scientist, P.M.S Blackett, The Military

and Political Consequences of Atomic Energy (London, Turnstile Press, 1948), chapter 10.

21. One list gives 2 for December 1945, 9 for June 1946, 35 for March 1948, 50 for May 1948, 150 for Decemer 1948, and 250 for October 1949: M. Kaku and D. Axelrod, To Win a Nuclear War; the Pentagon's Secret War Plans (Boston, Ma., South End Press, 1987), pp. x-xi. No source for the list is given.

22. The number of American publications which saw war in such terms is endless. See E. Luttwak, Strategy, the Logic of War and Peace (Cambridge, Ma., Harvard University Press, 1987) for a typical analysis.

23. See H. F. and W. F. Scott, The Soviet Art of War (Boulder, Co., Westview Press, 1982) pp. 134-5.

24. For a detailed comparison between the force levels on both sides as they were in 1960 see J. M. Collins, US-Soviet Military Balance, Concepts and Capabilities, 1960-1980 (New York, McGraw Hill, 1980) pp. 25-38.

25. Bundy, op . cit ., p. 616.

26. For the technical details see R. I. Tammen, MIRV and the Arms Race (New York, Praeger, 1973); as well as R. Betts. ed., Cruise Missiles: Technology, Strategy, Politics (Washington D.C., Brookings Institute, 1981) pp. 31-52.

27. See Report of Secretary of Defense James Schlesinger to the Congress on the FY 1975 Defense Budget and FY 1975-79 Defense Program (Washington D.C. Government Printing Office, 1974); also L. Etheridge Davis, Limited Nuclear Options: Deterrence and the New American Doctrine , Adelphi Paper, No. 121, winter 1975-7 (London, International Institute of Strategic Studies, 1976).

28. See above all V.D Sokolovsky, Military Strategy (New York, Praeger, 1963), pp. 183ff. Since then Soviet nuclear doctrine has served as the subject of uncounted publications: see R. F. Laird and Dr. R. Herspring, The Soviet Union and Strategic Arms (Boulder, Co.,Westview, 1984).

29. On these two crises see R. K. Betts, Nuclear Blackmail and Nuclear Balance

Washington D.C., Brookings, 1987) ppp. 62-5, 83-109.

30. For an analysis of the Soviet buildup and the reasons behind it see J. Erickson, Soviet Military Power (London, Royal United Serivces Institute, 1971); also Les Aspin, "What Are the Russians Up To?", International Security , 3 (summer 1978), pp. 30-54; and S. Carus, "The Evolution of Soviet Military Power since 1965", appendix II to Luttwak, The Grand Strategy of the Soviet Union , pp. 176-230.

31. C. Gray, The Future of Land-Based Missile Forces (London, IISS, 1978); also P. Nitze, "Deterring our Deterrent", Foreign Policy , 25, winter 1976-77, pp. 195-210.

32. Interview with Colonel General Nikolai Chervov, head of the Soviet Chief of Staff Directorate, International Defense Review , February 1990, p. 129.

33. For a Soviet view of the arms race and its dynamics see H. Trofimenko, "The 'Theology' of Strategy", Orbis , 21, fall 1977, pp. 497-515.

34. For some hair-raising anecdotes concerning the unreliability of pre-PAL nuclear controls see D. Caldwell, "Permissive Action Links", Survival , 29, No. 3, May-June 1987, pp. 224-38. It is alleged that, until 1962, "dual control" over nuclear weapons in Europe consisted of a German pilot sitting in his aircraft at the end of the runway and a pistol-armed American officer somewhere in the vicinity.

35. For Clausewitz's continued relevance to the contemporary world see above all A. Rappoport ed., On War (Hardmondsworth, Pelican Books, 1968) pp. 11-82; also B. Brodie, "The Continuing Relevance of On War ", in On War , P. Paret and M. Howard eds., pp. 45-60. For a fresh interpretation of his most celebrated phrase, van Creveld, The Transformation of War , p. 35ff.

36. See on this problem above all Gatt, op . cit ., introduction. Liddell Hart in calling Clausewitz "the Mahdi of Mass" was making the same point: The Ghost of Napoleon (New Haven, Ct., Yale University Press, 1933) pp. 118-29.

37. In reptrospect, Walter Millis' words ring true: "The military professional who must today preside over the design, production and employment of the giant weapons of mass destruction cannot really learn much from Napoloen, or Jackson, or Lee, or Grant--who were allmanagers of men in combat, not of "weapon systems" about which one of the most salient features is that they... must never be allowed to come into collision". Military History (Washington D.C., Service Center for Teachers of History, No. 39) pp. 16-7

38. Kissinger, op . cit ., chapter vi. The most comprehensive discussion of this entire line of thought may be found in K. Knorr and T. Read eds., Limited Strategic War (Princeton, N.J., Princeton University Press 1962).

39. For a notable contemporary criticism knocking the propps from under the "limited nuclear war" theory see B. Brodie, Escalation and the Nuclear Option (Princeton, N.J., Princeton University Press, 1966).

40. For the technical details of these weapons see Jane's All the World Aircraft and Jane's Weapons Systems (London, Brassey's, 1954-8).

41. The most comprehensive discussion of these theories is O. Heilbrunn, Conventional Warfare in the Nuclear Age (London, Allen& Unwin, 1965).

42. See above all A. J. Bacevich, The Pentomic Era, the U.S Army between Korea and Vietnam (Washington D.C., the National Defense University Press, 1986).

43. Kissinger, op . cit ., pp. 181-2.

44. Lt. Col. D. Lindsey, M.D., "No Time for Despair", Armor , 65, May-June 1956, pp. 38-9.

45. Lieutenant Colonel R. W. Ernst, in Military Review , 36, August 1956, pp. 55-62.

46. For an enthusiastic contemporary description of the most important of these tests see A. Leveiro, "Task Force Razor Shaves Big Apple 2", The Army Combat Forces Journal , 5, June 1955, pp. 38-43; for a criticism of its tactical realism, The Armored School, "Final Report of Test--Armored Task

Force Participation--Exercise Desert Rock VI, 1 August 1955", at the National Technical Information Service (NTIS), Srpingfield, Va.

47. Information supplied to me by Prof. M. Augursky, the Hebrew University, who claims to have been present at some of these experiments.

48. See for example H. Scoville, "Flexible Madness?" Foreign Policy , 14, spring 1974, pp. 164-77; and Senators Nunn and Barlett, US Congress, Senate, Committee on Armed Services, NATO an the New Soviet Threat , 95th Congress, 1st Session (Washington D.C., US Government Printing office, 1977).

49. See Bacevich, op . cit ., pp. 43-4, for some estimates of what nuclear war in Europe would do to the unfortunate countries involved in it.

50. For the role played nuclear weapons in the Korean War see D. Callingaert, "Nuclear Weapons and the Korean War", Journal of Strategic Studies 11, June 1988, pp. 177-202.

51. See for example W. F. Kaufmann ed., Military Policy and National Security (Princeton, N.J., Princeton University Press, 1956); R. E. Osgood, Limited War: the Challenge to American Strategy (Chicago, Chicago University Press, 1957); M. D. Taylor, The Uncertain Trumpet (New York, Harper, 1959); and, for a short summing-up, R. Brown, "Limited War", in C. McInnes and G. D. Sheffield eds., Warfare in the Twentieth Century (London, Unwin Hyman, 1988) pp.164-93.

52. The attempt to present Vietnam as if it were a conventional war (H. Summers, On Strategy (Bew York, Del Books, 1982, particularly pp. 106-32) is not convincing. In fact the war was conventional only for a few very brief periods, and during some of those periods (particularly December 1972) American airpower defeated the Northern invasion hands down.

53. The most recent discussion is D. Kinnard, "The Soldier as Ambassador: Maxwell Taylor in Saigon, 1964-1965", Paramters , 21, 1, spring 1991, pp. 31-46.

54. For an in-depth discussion see M. Clodfelter, The Limits of Airpower, the

American Bombing of North Vietnam (New York, the Free Press, 1989), particularly chapter II.

55. For a criticism of the invasion of Grenanda see W. S. Lind, "Report on the Congressional REform Caucus on the Grenada Operation", Washington D.C., Military Reform Institute, April 1985; of the Panaman operation, E. N. Luttwak, "Just Cause--A Military Score Sheet", Parameters , 20, March 1990, pp. 100-1. According to Newsweek , 5 November 1990, p. 3, fully one quarter of all American casualties in Panama were caused either by accidents or friendly fire.

56. At Potsdam, the Soviets set a pattern in managing to behave as if the atomic bomb did not mater or, alternatively, as if they had it too; see Rhodes, op . cit ., p. 691, and the sources there quoted.

57. H. S. Dinerstein, War and the Soviet Union (New York, Praeger, 1959) p. 96ff.

58. See for example Marshal Malinovsky's address to the Fourth Session of the Supreme Soviet, USSR, 15.1.1960, excerpted in H. F.and W. F. Scott, The Soviet Art of War, Doctrine, Strategy and Tactics (Boulder, Co., Westview Press, 1982), pp. 165-6. For Soviet criticism of "selective options" see J. Erickson, "The Soviet View of Deterrence; a General Survey", Surival , 26, November-December 1982, pp. 242-51; also F. Ermath, "Contrasts in American and Soviet Strategic Thought", International Security , 3, fall 1978, p. 149.

69. See for example Marshal V. D. Sokolovsky and General Major V. I. Zemskov; both as excerpted in Scott and Scott, op . cit ., pp. 174-77, 211-15.

60. See A. H. Cordesman, Deterrence in the 1980s: Part I, American Strategic Forces and Extended Deterrence , Adelphi Paper No. 175 (London, IISS, 1982) pp. 14-7, 33-4.

61. On this episode see E. O'Ballance, The Electronic War in the Middle East, 1968-70 (London, Faber & Faber, 1974) p. 120ff.

62. For an outline of pre-1979 Soviet activities in Afghanistan see A. Arnold, Afghanistan; the Soviet Invasion in Perspective (Stanford, Cal., Hooover Institution Press, 1985), especially chapters 6-8.

63. Even so, some veiled nuclear threats--though scarcely credible ones--were made by president Carter in connection with the Afghanistan cirsis. See B. Blechman and D. Hart, "Dangerous Shortcuts", New Republic , 26.7.1980, p. 14. Betts, incidentally, includes this episode among his "Higher Risk Cases".

64. For an analysis of the war and the Soviet decision to withdraw see above all A. Saikal and W. Malley eds., The Soviet Withdrawal from Afghanistan (London, Cambridge University Press, 1989), especially chapters 2, 6, and 9.

65. See e.g C. Gray, "The Most Dangerous Decade; Historic Mission, Legitimacy and Dynamism of the Soviet Empire in the 1980s", Orbis , 25, spring 1981, pp. 13-28. This article sees the "much younger" Soviet leadership of the near future as "eager to flex" its military muscle in a foreign policy adventure.

66. For an attempt to quantify the impact of modern technology on military operations see T. N. Dupuy, The Evolution of Weapons and Warfare (Indianopolis and new York, Bobbs Merill Co., 1980), chapters 27-30; for a Soviet view, N. A. Lomov ed., The Revolution in Military Affairs (Moscow, 1973, USAF trans., Washington D.C., US Government Printing Office, n.d), especially chapter 5. As a matter of fact, it could be argued that the predictions have proved false. In what few large scale conventional wars were fought between 1945 and 1988 rates of advance, the depth of fronts and the amount of destruction inflicted did not exceed those of World War II.

67. See inter alia M. van Creveld Military Lessons of the Yom Kippur War (Washington D.C., The Washington Papers, No. 25, 1975). A good recent summary of these issues, as far as they pertain to the Middle East, is H. Goodman and W. S. Carus, The Future Battlefield and the Arab-Israeli Conflict (New Brunswick, USA, Transaction Publishers, 1990). Ignoring nuclear weapons, it

reads as it it were a hundred years out of date.

68. At the time of writing, it reamins to be seen whether cruise missiles armed with conventional warheads can alter this situation.

69. On the Israeli side, these weapons still included American Sherman tanks, M 3 half tracks, and 105 milimeter artillery tubes. The Arab arsenals still included the standard Soviet 130 milimeter field gun, the SU 85 and SU 100 tank destroyers, and even--in the case of Syria--a few Mark III ex-German Panzers. See T. Dupuy, Elusive Victory (New York, Harper and Row, 1978) p. 221ff.

70. Ibid , pp. 593, 596. The Israeli invasion of Lebanon in 1982 did envisage the use of some novel systems, but in view of the IDF's massive superiority their contribution to the outcome of the land battle was marginal.

71. See for example Luttwak, op . cit ., particularly pp. 101-55. Luttwak, incidentally, clasifies his discussion of nuclear weapons under "nonstrategies".

72. E.g D. L. Maddill, "The Continuing Evolution of the Soviet Ground Forces", Military Review , 62, August 1982, pp. 52-68.

73. The best work on the cost of modern weapons and the impossibility of sustaining them economically is F. Spinney, Defense Facts of Life (Boulder, Co., Westview Press, 1986).

74. Betwen 1976 and 1985 the USSR outproduced the US by a factor of between 2.5 and 4 to 1 in most major weapon systems: see J. M. MecKean, "The US-Soviet Military Balance: Current and Projected Force Capabilities", in R. I. Paltzgraff and others eds., Emerging Doctrines and Technologies: Implications for Global and Regional Political-Military Balances (Lexingon, Ma., Lexington Books, 1988) p. 296.

75. On War , p. 79.

76. Ibid , p. 77.

77. For some examples see Freedman, op . cit ., where almost every one out of twenty five chapters presents some new strategy.

78. Kaku and Axelrod, op . cit ., table on pp. x-xi. Declining enthusiasm for the plans in question is also shown by their codenames: whereas the early ones bore such coloful names as "Broiler", "Frolic" and "Sizzle", later ones were known blandly as SIOPs (for Strategic Integrated Operations Plan) and a number.

79. For two prominent examples see J. D. Steinbrunner, The Cybernetic Theory of Decision: New Dimensions of Political Analysis (Princeton, N.J., Princeton Unversity Press, 1974); also R. Jervis, Perception and Misperception in International Politics (Princeton, Princeton University Press, 1976).

80. The foremost theorist of assymetrical deterrence, also known as the doctrine of tearing out an arm, was P. Gallois; see in particularhis The Balance of Teror: Strategy for the Nuclear Age (Boston, Ma., Houghton Mifflin, 1961).

81. Freedman, op . cit ., p. 400.

82. On War , p. 127.

83. T. Schelling, Arms and Influence (New Haven, Ct., Yale University Press, 1966). The phrases entered in quotation marks are actualaly Schelling's chapter titles.

84. If, as has been claimed, Kennedy did not actually promise to remove the missiles, at any rate the first thing he did after the crisis was to order them removed; see D. L. Haffner, "Bureaucratic Politics and 'those Frigging Missiles'; JFK and the US Missiles in Turkey", Orbis , 21, June 1977, pp. 307-34.

85. For a recent account of the Soviet side of this competition for the favors of Third World states see R. A. Rubinstein, Moscow's Third World Strategy (Princeton, N.J., Princeton University Press, 1988); for the American side,

R.L. Rothstein, The Third World and United States Foreign Policy (Boulder, Co., Westview, 1981).

86. Betts, Nuclear Balance and Nuclear Blackmail . Some people, incidentally, would put the number of threats much higher: e.g M. Halperin, Nuclear Fallacy, Dispelling the Myth of Nuclear Strategy (Cambridge, Ma., Ballinger, 1987) chapter 2.

87. See for example G. Golan, Yom Kippur and After; the Soviet Union and the Middle East Crisis (London, Cambridge University Press, 1977) pp. 122-4, which debunks the Soviet threat; also E. Karsh, The Cautious Bear: Soviet Military Engagement in Middle East Wars in the Post 1967 Era (Boulder, Co., Westview Press, 1985) pp. 79-80. According to Betts, Nuclear Balance and Nuclear Blackmail , p. 125, Kissinger later said that the DEFCON 3 maneuver was not one he would have dared repeat in the late seventies.

88. See R. Jervis, The Meaning of the Nuclear Revolution; Statecraft and the Prospect of Armaggeddon (Ithaca, N.Y., Cornell University Press, 1989) p. 20ff.

Chapter III.

1. New York Times , 10 October 1991.

2. The performance of the Patriots has been sharply criticized after the war; what would have happened if the Iraqi missiles, instead of carrying 250 kilograms of high explosive, had been armed with a nuclear warhead of similar size does not require elaboration. See Wall Street Journal , 26 April 1991.

3. Already in August 1952, i.e long before Eisenhower took over and started brandishing nuclear weapons, Mao had made it plain to his colleagues that a truce was inevitable and that China could be proud of its achievements; Mao Tsedong, Selected Works (London, Lawrence and Wisehart, 1954), vol. 5, pp. 78-80,

4. J. S. Dulles, "Report from Asia", Department of State Bullein , No. 32,821, 21 March 1955; D. D. Eisenhower, The White House Years: Mandate for Change, 1953-1956 (Garden City, N.J., Doubleday, 1963)

5. On this episode see S. Adams, Firsthand Report (Westport, Ct., Greenwood Press, 1974) p. 483.

6. On the role played, or not played, by American nuclear threats in bringing the Korean War to an end see C. A. MacDonald, Korea, the War before Vietnam (New York, N.Y., Free Press, 1986) chapter 10; E. C. Keefer, "President Dwisght D. Eisenhower and the End of the Korean War", Diplomatic History , 10, 3, summer 1986, pp. 280-1; D. Calingaert, "Nuclear Weapons and the Korean War", Journal of Strategic Studies , 11, June 1988, pp. 177-201; and R. J. Foot, "Nuclear Coercion and the Ending of the Korean Conflict", International Security , 13, 3, winter 1988-89, pp. 92-112. In the absence of Chinese documentary material, however, the evidence is inconclusive.

7. Conveniently summed up in J. W. Lewis and X. Litai, China Builds the Bomb (Stanford, Ca., University of California Press, 1988) p. 34ff.

8. Khruschev Remembers (trans. S. Talbot, London, Sphere Books, 1971) p. 255.

9. See various staements to this effect, dating between 1951 and 1978, quoted in G. Segal, Defending China (Oxford, Oxford University Press, 1985) p. 56ff.

10. See M. Gurtow, China under Threat Baltimore, Md., Johns Hopkins University Press, 1980), p. 92. Mao reportedly expressed surprise that "firing a few shots" would "raise such a fuss".

11. Lewis and Litai, op . cit ., pp. 107-8.

12. Text printed in ibid , appendix A.

13. Accidentally or not, this is exactly the reported range of Israel's Jericho II missile. One should always treat such figures with a pinch of salt.

14. United States Military Posture for FY 1981 (Washington D.C., Government

Printing Office, 1980), p. 76.

15. Statement by Deng Xiaoping, quoted in M. Clarcke, "Defense Modernization", The China Business Review , July-August 1984, pp. 40-1.

16. See Chong Pin Ling, China's Nuclear Weapons Strategy: Tradition within Evolution (Lexington, Ma., Lexinton Books, 1988), p. 54.

17. Printed in Lewis and Litai, op . cit ., p. 70. At this time, the Chinese were already speaking of their intention to develop "thermonuclear warheads with high yields and long range delivery vehicles".

18. See A. S. Whiting, The Chinese Calculus of Deterrence (An ARbor, Mich., University of Michigan press, 1975) p. 180, for the details.

19. New York Times , 19 August 1969; H. A. Kissinger, The White House years (London, Weidenfeld and Nicolson, 1979) pp. 183-4. Interestingly, Nixon does not mention the incident in his memoirs, except to say that the possibility of a Soviet strike against China was raised by de Gaulle during a meeting between them; R. N. Nixon, The memoirs of Richard Nixon (London, Sidgwick and Jackson, 1987) pp. 373-4. On the entire episode see also R. Betts, "Nuclear Peace and Conventional War", Journal of Strategic Studies , 11, March 1988, pp. 79-85.

20. P. H. B. Godwin, "Mao Zedong Revisted: Deterrence and Defense in the 1980's', in P. H. B. Godwin ed., The Chinese Defense Establishment: Continuity and Change in the 1980's" (Boulder, Co., Westview Press, 1983) p. 35.

21. Segal, Defending China , pp. 75-6.

22. Qutation in ibid , p. 57.

23. What evidence does exist is summed up in Cong Pin Lin, op . cit ., pp. 80-1.

24. See A. Angley-Hsieh, Communist China's Strategy in the Nuclear Era (Englewood Cliffs, N.J., Prenctice-Hall, 1962) p. 62.

25. Lewis and Litai, op . cit ., p. 217.

26. See also G. Segal, "Strategy and Ethnic 'Chic'", International Affairs

60, winter 1984-5, pp. 15-30.

27. Mao, op . cit ., vol. 5, pp. 152-3, 310.

28. For the evidence, which is admittedly somewhat tenuous, see Chong Pin Lin, op . cit ., p. 78.

29. Ibid , ibid .

30. See Segal, Defending China , p. 176ff.

31. Quoted in H. Gelber, "Nuclear Weapons and Chinese Policy", Adelphi Paper No. 99 (London, International Institute of Strategic Studies, 1973) p. 19.

32. Chong Pin Lin, op . cit ., pp. 68-73, 134ff.

33. See M. B. Lanski, "People's War and the Soviet Threat: the Rise and Fall of a Military Doctrine", Journal of Contemporary History 18, No. 4, October 1983, pp. 619-50; and H. B. Godwin, "People's War Revised: Military Doctrines, Strategy, and Operations", in E. B. Lovejoy and B. W. Watson eds., China's Military Reforms, International and Domestic Implications (Boulder, Co., Westview Press, 1986) pp. 1-14.

34. See Chong Pin Lin, op . cit ., p. 84.

35. See on this question an undated quotation in ibid , p. 85, from which it may perhaps be learnt that the Chinese have no more been able to solve this problem than anybody else.

36. See Y. I. Verzberger, China's Southwestern Strategy: Encirclement and Counterencirclement (New York, Praeger, 1985) particularly chapter 1. It is important to note thatd, as far as matterss Indian are concerned, China's nuclear arsenal is hardly ever mentioned--though needless to say it is always there.

37. See A. J. Gregor and M. Hsia Chang, The Iron Triangle: US Security Policy for Northeastern Asia (Stanford, Ca., Hoover Institution Press, 1984) p. 125ff., for an analysis.

38. See R. Karniol, "Taiwan's Space and Missile Program", International

Defense Review , 8/1989, pp. 1077-8.

39. E. Snow, China's Long Revolution (New York, Random House, 1972 ed.), pp. 175-6.

40. On Nehru's attitude to the nuclear question see W. Crocker, Nehru, a Contemporary's Estimate (London, Allen and Unwin, 1966) p. 116; also G. Sarvepalli, Jawaharlal Nehru--a Biography (Cambridge, Ma., Harvard University Press, 1984) p. 189.

41. Bhaba, who received his training at Cambridge University, had been elected Fellow of the London Royal Society at the age of 31. For the father-son relationship that existed between him and Nehru see R. S. Anderson, Building Scientific Institutions in India; Saha and Bhaba (Montreal, Centre for Developing-Areas Studies, McGill University, 1975), occasional paper No. 11.

42. For a short summary see L. S. Spector, "New Players in the Nuclear Game", Bulletin of the Atomic Scientists , January/February 1989, pp. 29-32. India's nuclear establishment comprises several research reactors as well as electricity-generating plants, a plutonium breeder reactor, and no fewer than three different plutonium separation plants.

43. See R. G. C. Thomas, "India's Nuclear and Space Programs: Defense or Development?" World Politics , 38, 2, January 1986, pp. 315-44, for a discussion of this problem.

44. See O. Brosh, "Perceptions and Public Attitudes towards the Nuclear Dimension in Multilateral Conflicts" (Hebrew, Ph.D thesis submitted to the Hebrew University, Jerusalem, 1990) pp. 223-24; also Y. Verzberger, "Bureaucratic-Organizational Politics and Information Processing in a Developing State", International Studies Quarterly , 28, 1, March 1984, p. 89ff.

45. See R. Krishna, "India and the Bomb", India Quarterly , 21, 2, April-June 1965, pp. 119-37, for details.

46. For the background see L. Kavic, India's Quest for Security; Defence Policies, 1947-1965 (Berkeley, Cal., University of California Press, 1967) p. 169 ff; also Y. I. Vertzberger, Misperceptions in Foreign Policymaking: the Sino-Indian Conflict, 1959-1962 (Boulder, Co., Westview Press, 1984).

47. A. Lall, The Emergence of Modern India (New York, Columbia University Press, 1981) p. 167.

48. As an example of Indian equanimity, see R. V. R. Chankrasekhara Rao, "China's Missile Capability", Mainstream , May 24, 1980, pp. 5-6; for a discussion of the China factor in India's strategy, Brosh, op . cit ., p. 270ff., and G. G. Mirchandani, India's Nuclear Dilemma (New Delhi, Popular Books Service, 1968), p. 91ff.

49. See L. E. Rose, "Pakistan's Role and Interests in South and Southwest Asia", Asian Affairs , 9, 1, September-October 1981, p. 56.

50. For a discussion of Indian "hegemonial" aspirations and their impact on other regional powers see L. E. Rose, "India's Regional Policy: Nonmilitary Dimensions", in S. P. Cohen ed., The Security of South Asia (Urbana, Ill., University of Illinois Press, 1978) pp. 3-21.

51. For a summary of Pakistani perceptions of the problem see B. Naqvi, "The Peace Option for Pakistan", ibid , pp. 106-18.

52. See Kavic, op . cit ., pp. 8-28, for the origins of India's foreign policy.

53. On the background see P. K. S. Namboodiri, "Perceptions and Policies in India and Pakistan", in K. Subrahmanyam ed., India and the Nuclear Challenge (New Delhi, Lancer International, 1986) p. 222; on the Pakistani reaction to the statement, Brosh, op . cit ., p. 283.

54. See Mirchandani, op . cit , pp. 56-7; also R. L. M. Patil, India--Nuclear Weapons and International Politics (New Delhi, National, 1969) p. 24. The most important factor which prevented an Indian nuclear weapon from being

built was the fear lest Pakistan would follow suit, or so the government claimed.

55. For the origins and development of The Indian-Soviet connection see N. A. Husain, "India's Regional Policy: Strategic and Security Dimensions", in S. P. Cohen ed., The Security of South Asia, American and Asian Perspectives , p. 29ff.

56. The best account of the events that led to the war remains G. W. Choodhury, The Last Days of United Pakistan (Bloomington, Ind., Indiana University Press, 1974). The author is an ex-official of the Pakistani foreign minister.

57. The Memoirs of Richard Nixon , pp. 527-8.

58. See P. S. Jayaramu, India's National Security and Foreign Policy (New Delhi, ABC, 1987) p. 83ff. for a semi-official Indian assessment of the episode and its implications.

59. See C. K. Ebinger, Pakistan: Energy Planning in a Strategic Vortex (Bloomington, Ind., Indiana University Press, 1981) p. 80.

60. P. K. S. Namboodiri, "Perceptions and Policies inn India and Pakistan", in K. Subramanyam ed., INdia and the Nuclear Cahllenge , p. 226 ff., gives the most coherent Indian view of Pakistan's nuclear development. For Bhutto's own accounts of his efforts see Z. A. Bhutto, If I am Assassinated (New Delhi, Vikas, 1979) p. 137ff.

61. Brosh, op . cit ., p. 224ff, sums up the statements made by India's various prime ministers over the years.

62. L. Spector, "If India and Pakistan Go to War", International Herald Tribune , 8 June 1990, p. 6.

63. For India's missile program see Y. Pahl, "Focus--Specificities of India's Space Program", Mainstream , 23 February 1985, pp. 7-10, 34; International Herald Tribune , 26 February 1986; G. Milhollin, "India's Missiles--with a

Little Help from our Friends" Bulletin of the Atomic Scientists , November 1989, pp. 31-5; and Brosh, op . cit ., p. 263ff., which is the most complete and up to date survey of all.

64. India's attempts to purchase a supercomputer may be understood against this background; see The Hindu (Madras), 24 November 1984, p. 1; The Telegraph (Calcutta), 11 March 1985, p. 4; and The Hindustan Times (New Delhi), 16 October 1986. On the assumption that one accuses others of trying to do what one has alredy done oneself, a hint concerning Indian tactical nuclear capabilities may be contained in R. G. Sawherry, "Pakistan's Military Capability", Journal of IDSA , 16, 3, January-March 1984, pp 205-6.

65. For a convenient summary see J. Singh, "The Challenge of our Time", in K. Subrahmanyam ed., India and the Nuclear Challenge , chapter I; and idem ,"The Threat of Nuclar Weapons", ibid , chapter II. The two articles together prresent the best available rationale behind India's nulclear policy; they also bear a semi official character in that, at the time of writing, Subrahmanyam was director of the semiofficial Institute for Defense Studies and Analyses and Singh his deputy.

66. See A. R. Khan Abbasi, "Thirty Five Years of Pakistan-China Relations", Strategic Studies ,ix, 4, summer 1986, pp. 22-43 for details.

67. See e.g New York Times , 21 September 1982; Hindustan Times (New Delhi), 21 October 1985, p. 3; Delhi Domestic Service in English, 21 October 1985, DRSA, 21 November 1985, E 1; The Statesman (Calcutta), 26 July 1986, p. 8; Times of India (New Delhi), 1 April 1986, p. 1. The Chinese have consistently denied the allegations; News from China (Bulletin of the Chinese Embassy in New Delhi), 5 November 1985, and Delhi Domestic Service in English, 21 November 1985 (DRSA, 21 November 1985).

68. See S. Johal, "America's Arming of Pakistan; Indian Views in the 1950's and 1980s", Strategic Studies , ix, 2, winter 1986, pp. 68-79, for an Indian

interpretation of this question.

69. See in particular K. Subrahmanyam, "Implications of Nuclear Assymetry", in idem ed., Nuclear Myths and Realities: India's Dilemma (New Delhi, ABC Publishing, 1981) p. 215ff.

70. See K. Subrahmanyam, "Pakistani Credibility Gap", Journal of IDSA , 14, 1, July-September 1981, pp. 116-17; S. Rashid Naim, "Asia's Day After: Nuclear War between India and Pakistan?" in S. P. Cohen ed., The Security of South Asia , appendix 1, pp. 243-50; also S. P. Cohen, "Conclusions", in ibid ., p. 236; A. R. Siddiqi, "Nuclear Non-Proliferation in South Asia; Problems and Prospects", Strategic Studies , 10, 4, summer-autumn 1987, p. 115. Michandani, op . cit ., p. 153, claims that Nehru was actually one of the first to worry about the effects of nuclear weapons on the environment; already in 1954 he set up an expert committee to study the problem and had its finding published.

71. For the background R. G. Wirsing, "The Siachen Glacier Dispute", parts 1, 2, and 3, Strategic Studies , vols. x, No. 1, autumn 1987, pp. 49-66; xi, No. 3, spring 1988, pp. 75-94; and xii, No. 1, autumn 1988, pp. 38-54; for a ground view of the hostilities "War on the High Ground", Time , 17 July 1989, pp. 19-25.

72. Dawn (Karachi), 2 March 1983, p. 1; Jang (Karachi, Urdu), 6 August 1983, p. 3; Mashriq (Karachi, Urdu), 25 May 1984, p. 3; The Muslim (Islamabad) 16 Sptember 1984, p. 4; 2 October 1985, p. 4; 5 November 1985, p. 4. The Pakistanis have also published Indian denials: Jang (Karachi, Urdu), 18 January 1986, p. 3.

73. The Telegraph (English, Calcutta), 7.3.1987

73. For a Pakistani view of the origins of the conflict see A. Samad Khan, "The Indo-Pakistani Rivalry and the sub-Continental Security Calculuus", Strategic Studies , 9, 1, autumn 1985, pp. 15-45.

74. See R. B. Rais, "Pakistan's Nuclear Program", Asian Survey , 25, April 1985, pp. 458-72 for details.

75. In fact, there are some signs of rivalry between the two parts of Pakistan's program, the civilian and the military. See Brosh, op . cit ., p. 135.

76. R. R. Subrahmanian and K. Subrahmanyam, "Mutual Inspection and Verification", in K. Subrahmanyam ed., India and the Nuclear Challenge , pp. 168-9; J. C. Snyder, "The Non-Proliferation Regime: Managing the Impending Crisis", in N. Joeck ed., Strategic Consequences of Nuclear Proliferation in South Asia (London, F. Cass, 1986) p. 24. However, the International Atomic Energy Commission which visited KANUPP in 1989 found no plutonium missing from it: see Spector, The Undeclared Bomb , p.152, note D.

77. Rais, loc . cit ., p. 467.

78. In 1979 the Government at the Hague published the results of its investigation into this affair with the objective of minimizing its significance and reestablishing Dutch relability. It appears that Qadir Khan was able to get specifications of centrifuges as well as manuals for their operation and the addresses of German companies which manufacture them. See Subrahmanyam, Nuclear Myths and Realities , appendix I, pp. 165-89.

79. The Washington Post , 10 February 1984, p. 34a.

80. New York Times , 5 May 1987, p. 1; 15 July 1987, p. 1; and Brosh, op . cit . , p. 313.

81. See India Today (New Delhi), 31 March 1987, pp. 72-80.

82. L. Spector in International Heralrd Tribune , 8 June 1990.

83. Dawn (Karachi)m quoted by Delhi Domestic Service in English, 29 January 1989 (FBIS-NES-89-018, 77). The best source on the entire question is Brosh. op . cit ., pp. 315-16.

84. See for example Mohammed Ayub Khan, "The Pakistan-America Alliance:

Stresses and Strains", Foreign Affairs , 42, January 1964, p. 196;; and Z. A. Bhutto's appropriately titled book The Myth of Independence (London, Oxford University Press, 1969). Zia Ul Haq is said to have repeated the claim: The Telegraph (Calcutta), 22 February 1987, p. 6.

85. See S. Ganguly, "Avoiding War in Kashmir", Foreign Affairs , 69, 5, winter 1990-1, p. 67ff. for an analysis.

86. For a very good exposition of way Pakistanis see the entire tangle cf. Lieutenant General A. I. Akram, "Security and Stability in South Asia", in Cohen ed., op . cit ., pp. 163-80.

87. "The army is "still visibly and substantially more British than Mughal"; Cohen, The Pakistani Army , pp. 8, 42.

88. P. Iqbal Cheema, "American Policy in South Asia: Interests and Objectives", in Cohen ed., The Security of South Asia , pp. 124-5.

89. See T. Kheli, "New Pakistan's Foreign Policy", Orbis , fall 1976, p. 753 for Bhutto's reaction to India's PNE.

90. Bhutto, op . cit ., p. 137.

91. See Brosh, op . cit , pp. 289-90, for various high-ranking Pakistani statements to this effect.

92. Masriq (Karachi, Urdu),25 February 1986, pp. 1, 7.

93. Pakistan Times (Lahore), 8 December 1986, Supplement, p. iii; Dawn (Karachi), 7 June 1983, Supplement, p. vi. See also S. Tahir-Kheli and W. O. Staudemeier, "The Saudi-Pakistani Military Relationship" Implications for US Policy, Orbis , 26, 1, spring 1982, pp. 155-72.

94. Washington Post , 8 April 1990.

95. Much the best account of this entire issue is Brosh, op . cit ., p. 316ff.

96. Rais, loc . cit ., pp. 463-5; J. S. Metha, "India and Pakistan: we Know the Past. Must we Live in it?" in Cohen ed., The Security of South Asia , p. 198; A. Samad Khan, loc . cit ., p.19ff.

97. See Rashid Naim, loc . cit ., especially pp. 287, 280-1; also A. R. Siddiqi, "Nuclear Non-Proliferation in South Asia; Problems and Prospects", Strategic Studies , 10, 4, summer & autumn 1987, p. 115. Siddiqi, incidentally, is editor of the Karachi Defense Journal which is closely tied to the Pakistani Army.

98. See M. Bar Zohar, Ben Gurion (Tel Aviv, Am Oved, Hebrew) p. 1345. Bar Zohar, a journalist and Labor MK, was close to Ben Gurion and also did extensive work in the Ben Gurion archive at Sdeh Boker.

99. Interestingly, one of the best short appreciations is to be found in C. S. Raj, "Israel and Nuclear Weapons: a Case of Clandestine Proliferation", in Subrahmanyam ed., Nuclear Myths and Realities , pp. 87-118. See also S. Aronson, Conflict and Bargaining in the Middle East, an Israeli Perspective (Baltimore, Md., Johns Hopkins University Press, 1978) p. 15ff.

100. See the account of a 1962 meeting in which the issue was threshed out in Y. Evron, Israel's Nuclear Dilemma (Hebrew, Tel Avid, Hakkibutz Hameuhad, 1987) p. 17ff.

101. See above all the series of articles in New Outlook , a left-wing periodical, vol. 4, No. 5, March-April 1962, pp. 18-21; vol. 5, No. 4, May 1962, pp. 13-20; vol. 5, No. 9, November-December 1962; vol. 7, No. 2, February 1964, pp. 34-8; vol. 8, No. 2, March 1965, p. 21 (an appeal for nuclear disarmament, signed by some of Israel's leading academics and scientists); vol. 9, No. 3, March-April 1966, pp. 3-6; and vol. 9, No. 5, June 1966, pp. 44-7.

102. Brosh, op . cit ., p. 59ff and the vast literature there quoted.

103. See New York Times , 7 March 1966 (report of Israeli newspaper editors asking for a relaxation of the ban on discussing nuclear weapons).

104. Eshkol's decision to slow down the development of surface to surface missiles led to the resignation of Yuval Ne'eman from the ministry of defense;

see his own account in Ha'aretz , 6 February 1976.

105. The evidence for the Johnson Administration's attempts to restrain Eshkol, and its results, is available in the Lyndon Johnson Library. See Brosh, op . cit ., p. 66ff.

106. Bundy, op . cit ., p. 510. Extensive building preparations preceeded the 1964 visit; private sources.

107. Brosh, op . cit ., p. 80ff.

108. Discuss this with Bregmann

109. See Y. Allon, The Making of Israel's Army (London, Sphere Books, 1971) pp. 78-9.

110. Aronson, op . cit ., pp. 95-6; also Time , 12 April 1976, p. 19.

111. P. Pean, Les deux bombes (Paris, Fayard, 1982), p. 113-21; H. Krosney and S. Weissmann, The Islamic Bomb (Hebrew, Jerusalme, Adam & Kastel, 1982) p. 11; Sunday Times , 5 and 12 October 1986; Brosh, op . cit ., p. 78.

112. The best indication that the bomb was actually built in the summer of 1969 may be found in the fact that the US put an end to its attempt to make Israel sign the NPT; see Brosh, op . cit .,p. 84.

113. See ibid , p.82ff., for a detailed discussion of this period.

114. For example, the raids launched by the IDF against targets West of Suez in the autumn of 1969; also the start of "strategic" bombing in the winter of 1970. The best English-language account of the war remains E. O'Ballance, The First Electronic War (London, Faber and Faber, 1974).

115. See. e.g speech to officer cadets reported in Ha'aretz (Tel Aviv, Hebrew), 24 July 1972.

116. See A. Kahalani, A Warriors's Story (Tel Aviv, Steimatzky, 1989, Hebrew) p. 15 for the assessment of the war by Israeli Military Intelligence. For what happened in Washington, A. Dowty, Middle East Crisis: US Decision-Making in 1958, 1970 and 1973 (Berkeley, Ca., University of California Press, 1984)

p. 229, reporting on the reaction of the Watch Committee Middle East, to the outbreak of the war.

117. Information about this meeting was published by Time Magazine, 24 April 1976, p.19. I have independent confirmation as to its correctness.

118. The best available accounts of the fighting on the Golan Heights are Dupuy, op. cit., pp. 458-9; H. Herzog, The War of Atonment (London, Futura, 1975) pp. 112-3; M. Dayan, Story of My Life (London Sphere, 1976) p. 488; A. Kahalani, Oz 77 (Tel Aviv, Shocken, 1976, Hebrew) p. 104ff. and, above all, the specialized study by E. Hecht, "The Yom Kippur War on the Golan Heights--6 to 10 October 1973" (Tel Aviv, 1987, Hebrew). None of these mention nuclear weapons in any way; yet none offers a convincing explanation as to why the Syrians suddenly withdrew after having achieved what was effectively a breakthrough. The quotation from Tlas is from C. Wakebridge, "The Syrian Side of the Hill", Military Review, February 1976, p. 29.

119. New York Times, 19 May 1966.

120. See statements by prime minister Rabin, minister of defense Peres, and foreign minister Alon: Ma'ariv (Tel Aviv, Hebrew), 8 April 1976; Davar (Tel Aviv, Hebrew), 30 April 1976; and Ha'aretz (Tel Aviv, Hebrew), 9 September 1976.

121. Ma'ariv, (Tel Aviv, Hebrew) 12 December 1974.

122. See footnote 120.

123. To this day, there are many who are convinced Vanunu, a technician at Dimona, was either working for Israeli Intelligence or unwittingly used by them. See on this entire affair F. Barnaby, The Invisible Bomb (London, Tauris, 1989), particularly the introduction.

124. R. W. Tucker, "Israel and the United States: from Dependence to Nuclear Weapons?" Commentary, November 1975, pp. 29-43.

125. See A. Dowty, "Israel and Nuclear Weapons", Midstream, 22, No. 7,

November 1976, pp. 7-22 for the most sophisticated discussion as well as an extensive list of sources. Other prominent authors involved in the debate include S. Rosen, "Nuclearization and Stability in the Middle East", The Jerusalem Journal of International Relations , 1, No. 3, spring 1976, pp. 1-38; and Y. Evron, "Some Effects of the Introduction of Nuclear Weapons in the Middle East", in A. Arian ed., Israel; a Developing Society (Tel Aviv, Sapir Center, 1980) pp. 105-26. The highest ranking Israeli to take this line of thought in public was no other than Dayan: see his comments as reported in Ma'ariv , 20 February 1976.

126. See above all S. Feldman, Israeli Nuclear Deterrence: a Strategy for the 1980s (New York, Columbia University Press, 1982).

127. The leading Israeli advocate of this approach is Y. Evron, "Israel and the Atom; the Uses and Misuses of Ambiguity", Orbis , 17, winter 1974, pp. 1326-43.

128. Feldman, op . cit ., p. 55. Here it is pointed out that, whereas 30% of Israel's population live in three large cities, the correspoding figures for Egypt, Syria, Jordan, Saudi Arabia and Libya respectively are 25, 28, 38, 21 and 41%. Feldman's analysis is not altogether convincing, since it excludes the people living in what are effective the suburbs of Tel Aviv. On the other hand, it does point out the vulnerability of the other side; to say nothing of the fact that both Egypt and Iraq have dams that could be destroyed by nuclear weapons with absolutely disastrous results.

129. Here it is not out of place to point out that many of the academics in question also serve in the IDF, particularly in the Planning and Intelligence Branches. Also, in Israeli academic circles, Hebrew-language publications hardly count; it is writings appearing in the "international" (read English-speaking) arena that matter in regard to prestige and advancement.

130. Barnaby, op . cit ., chapter 3.

131. Ha'aretz , 2 June 1989. Using veiled language, Peres--then serving as minister of finance--concluded that the time had come to base Israel's on its nuclear deterrent, incidentally making the return of the territories possible.

132. See e.g A. Yaniv, Ha'aretz (Tel Aviv, Hebrew), 29 May 1990. p. B6.

133. Ibid . This author, however, knows for a fact that Israel has been developing plans to stop the Iraqis by conventional means.

134. See A. Yaniv, Dilemmas of Security: Politics, Strategy, and the Israeli Experience in Lebanon (Oxford, Oxford University Press, 1987) p. 19.

135. Israel TV, 22 August 1990.

136. See Brosh, op . cit ., p. 102ff., 135 ff., for all the quotations one could wish for on this subject.

137. A. Shukeiri, chairman of the Palestinian Council speaking to students in Cairo: PLO Radio, 27 December 1965.

138. Al Sabua al Arabi (Beirut, Arabic), 11 October 1965; Al Achbar (Cairo, Arabic) 20 October 1965;

139. Telegrams, Deputy Secretary of State Ball to AmEmbassy Cairo), 28, 30 May 1964; Lyndon B. Johnson Library, quoted in Brosh, op . cit ., p. 68.

140. Radio Baghdad, 20 February 1966; Al Hariа (Beirut, Arabic), 21 February 1966; New York Times , 21 February and 18 April 1966.

141. Same to same, 19 March 1966, No. 2379, LBJ Library, Country File UAR, Box 159-161, item 20; quoted in ibid , pp. 204-5.

142. Al Da'fa (Amman, Arabic) 12 May 1966; New York Times , 4 February 1966. The story was confirmed in retrospect by Isma'il Fahmi in Al Sha'ab (Cairo, Arabic), 17 February 1971, and Al Ahram (Cairo, Arabic), 26 February 1981.

143. In standard accounts of the origins of the war, e.g W. Laqueur's The Road to Jerusalem (London, Weidenfeld & Nicolson, 1968) nuclear issues are not even mentioned.

144. Telegrams Ambassador Battle (Cairo) to Secstate, 21 February 1966, Lyndon B. Johnson Library; compare this with the Egyptian version as it appeared in Al Yaum (Beirut, Arabic), 1 May 1966, from which it appears that Sadat refused to take Johnson's assurances at face value.

145. Telegram, American ambassador, Cairo, to State Department, 11 April 1964, No. A 737, LBJ Library, NSF Country File UAR, Box 158, item 39; quoted by S. Aronson, The Politics and Strategy of Nuclear Weapons in the Middle East (Unpublished, Jerusalem, the Hebrew University, 1991) pp. 198-9.

146. Al Achbar (Cairo, Arabic), 5 February 1965; Al T'ura Al Arabia (Baghdad, Arabic), February 1966; Radio Baghdad, 6, 19 May 1966; Al Manar (Amman, Arabic), 14 February 1967. All these made explicit references to the need to fight a "preventive war" before Israel built the bomb.

147. See on this episode Brosh, op . cit ., pp. 79-80.

148. E.g Al Ahram (Cairo), which on 14 June 1967 informed its readers that Israel's "next step" would be to build the bomb; also Roz al Jussouf (Cairo, Arabic), 27 May 1968, and Aronson, op . cit ., p. 150.

149. Newsweek , 2 February 1969. According to Nasser, "Egyptian experts" did not believe Israel capable of developing nuclear weapons in short order: coming from him, this was news indeed.

150. Al Ahram (Cairo), 11 November 1969. This statement, interestingly enough, came one day before the New York Times declared that Israel had built the bomb.

151. New York Times , 21 November 1968.

152. Radio Cairo, 11 January 1969.

153. Among other episodes, Nasser used the problem of nuclear weapons to explain to Qaddafi was to why no "war of destruction" against Israel was possible; yet on the other hand he carefully skirted the question whether it was Israel itself possessed those weapons. M. Heikal, The Road to Ramadan

(London, Sphere Books, 1974) pp. 74-5.

154. See Israel and Nuclear Weapons: Present Options and Future Strategies (London, IISS/Chatto & Windus, 1971). The book, incidentally, was immediately translated into Arabic.

155. Al Ahram (Cairo, Arabic) 19 October 1973; Al Anuar (Beirut, Arabic), 16 February 1976; ibid , 12, 15, & 19 June 1977; Al Achbar (Cairo, Arabic), 23 November 1977; Al Ha'ali (Alexandria, Arabic), 15 December 1982. Heikal's own views are analyzed at length in A. Aronson, "The Nuclear Dimension of theArab-Israeli Conflict", Jerusalem Journal of International Relations , 7, 1-2, 1984, p. 134ff.

156. Fahmi in Al Sha'ab (Cairo, Arabic), 17 February 1981; Muhi a Din in Al Wattan Al Arabi (Beirut, Arabic), 24 July 1981; Shazli in Al Mukaf Al Arabi (Beirut, Arabic), 3 January 1983.

157. Former foreign minister Ismail at the December 1987 Nuclear Disarmament Conference, Cairo, quoted in Hazab (Daily Report, Israeli Intelligence Service), No. 843/23, 27 January 1988.

158. Al Sha'ab (Cairo, Arabic), 14 October 1986; Al Mukaf Al Arabi (Beirut, Arabic), December 1986, p. 32; Al Anba'a (Cairo, Arabic), 7 January 1987, p. 23.

159. For the details see Brosh, op . cit ., p. 122ff.; on Egypt's sensitivity to ecological problems resulting out of nuclear waste also M. Heikal, Autumn of Fury (New York, Random House, 1983) p. 180.

160. Sadat interview with Ittela At (Teheran, Farsee), 17 December 1974; Sadat on French television, 27 February 1975; minister of defense Gamassy in Al Madnia (Riad, Arabic), 7 December 1975; Sadat interview with Al Ziad (Beirut, Arabic), 12 January 1976; Sadat press conference in Rome, reported in Ha'aretz (Tel Aviv, Hebrew), 9 April 1976; Washington Post , 1 May 1976. All have this in common that the Egyptians claimed "not to know" whether Israel had the bomb

but added that, if she did, Egypt was in a position to get it too; for a list of such statements see Y. Evron, "The Relevance and Irrelevance of Nuclear Options in Conventional War: the 1973 October War", Jerusalem Journal of International Relations , 7, 1-2. 1984, p. 155.

161. Al Aharam Alaktazadi , 1 May 1976.

162. Al Musawwar (Cairo, Arabic), 8 May 1987; Cairo Domestic Service, Arabic, 8 May 1987; Al Sharq Al Awsat (London, Arabic), 18 August 1987; Mena (Cairo, Arabic), 8 November 1987.

163. BBC World Service, "Radio Newsreel", 2 October 1988.

164. Though the performance of the armed forces and their failure to liberate the whole of the Sinai have been subject to growing criticism in Egypt, strangely the debate contains no reference to nuclear weapons. See H. Raviv, "The Failure: an Egyptian Version", Bamachaneh (Tel Aviv, Hebrew), 22. October 1986, pp. 9-10.

165. Al Atchad (Cairo, Arabic), 12 January 1989; see also Roz al Joussuf (Cairo, Arabic), 28 November, 5 & 12 December 1988, where the reasons behind Cairo's ostrich-like strategy as well as its reasons for not wanting nuclear weapons are explained in some detail.

166. During a year's research, I have only been able to locate one source where an Egyptian explicitly admits the impact of nuclear weapons on the peace between Egypt and Israel, and even that one is contained in an English language publication and buried in a footnote. See A. M. Said Aly Abdel Aal, "The Superpowers and Regional Security in the Middle East", in M. Ayoob ed., Regional Security in the Third World (London, Croom Helm, 1986) p. 212 footnote 15.

167. See Feldman, op . cit ., pp. 78-82 for the details.

168. Damascus Radio, 7 July 1966; Al Mussawar (Cairo, Arabic), 16 December 1966; Al T'ura (Damascus, Arabic), 11 July 1967.

169. Al Sabua Al Arabi (Beirut, Arabic), 1.7.1974. The author was Colonel Ayubi of the Syrian Military Intelligence Service.

170. Ibid , 4 July 1974, by the same author.

171. Al T'ura (Damascus, Arabic), 13 November 1976.

172. Al Manar (London, Arabic), 10 December 1977; Tishrin (Damascus, Arabic), 2 August 1980, 18 November 1980, 24 November 1980.

173. Quoted in Ma'ariv (Tel Aviv, Hebrew), 2 June 1985.

174. For an analysis of Soviet-Syrian relationships during this period and Asad's persistent attempts to get more out of Moscow than the latter was prepared to grant see E. Karsh, "A Marriage of Convenience: the Soviet Union and Asad's Syria", Jerusalem Journal of International Relations , 11, 4, December 1989, p. 9ff.

175. See also Mu'amar Khadaffi's attempts to get nuclear weapons first from China and then from Pakistan: M. Heikal, The Road to Ramadan London, Sphere, 1976) pp. 74-5; Feldman, op . cit ., p.p. 79-81, and Brosh, op . cit ., pp. 178-9.

176. See Brosh, op . cit ., pp. 186-87, for an analysis of the Syrian concept of "strategic parity".

177. Tishrin , 3 November 1982; Al T'ura (Damascus, Arabic), 24 November 1982.

178. Al T'ura (Damascus, Arabic), 24 November 1982; Tishrin (Damascus, Arabic), 5 June 1986. The author explicitly says that it is not part of the Ba'ath ideology to commit suicide. Given the possibility that Israel may resort to nuclear weapons/and or bombardment with radiactive materials in another war, the Liberation of Palestine will have to be achieved by other means.

179. See M. Ma'oz, Asad: the Sphinx of Damascus (New York, Grove Weidenfeld, 1988) p. 179ff. On 13 June 1990 the newspaper Ha'aretz (Tel Aviv, Hebrew) reported another speech by Asad in which, while very carefully skirting the

question of nuclear weapons, he said in effect that there would not be another major war against Israel.

180. See A. Ben Tzur, "The Arabs and the Israeli Reactor", New Outlook (April 1961), pp. 18-21.

181. See A. Bar'am, "Saddam Hussein; a Political Profile", The Jerusalem Quarterly , No. 17, fall. 1980, pp. 129, 137.

182. Much the best account of Iraq's Ba'ath regime and its goals in life is A. Bar'am, "Particularism and Integration in Iraqi Thought and Action under Ba'ath Rule"(Ph.D Thesis, Jerusalem, 1986, Hebrew), particularly p. 301ff.

183. Ibid , pp. 266-7.

184. See undated conversation between General (ret.) A. Tamir, director general of the Israeli foreign ministry under Begin, and Iraqi vice president Tareq Abdel Aziz; reported in Yediot Acharonot , 15 February 1991.

185. See Brosh, op . cit ., p. 165, and the evidence there adduced.

186. See ibid , p. 166 ff., for the most detailed account.

187. See, however, M. J. Brenner, "The Iran-Iraq War: Speculations about a Nuclear Re-Run", Journal of Strategic Studies , 8, 1, March 1985, pp. 22-37.

188. Iraqi memo to the Arab League, undated (spring 1977?), reported in Al Sabua al Arabi (Beirut, Arabic), 17 october 1977.

189. Brosh, op . cit ., p. 172ff.

190. See International Herald Tribune , 9 September, 28 November, 1990. As far as anyone can make out, Iraq was attempting to follow the Pakistani road towards the bomb by employing centrifuges for uranium enrichment while at the same time adopting an "ambiguous" declaratory policy. Iraq, however, also had--and may still have--approximately 13 kilograms of highly enriched uranium salvaged from Osirag. In November Baghdad permitted IAEC access to this uranium, thus simultaneously proving that it had not yet the bomb and that it could do so if it really wanted to.

191. Washington Times , 14 December 1989; Ma'ariv (Tel Aviv, Hebrew), 15 December 1989; Newsweek , 9 April 1990, p. 8; New York Times , 28 April 1991, reporting on Iraq's nuclear potential before- and after the Gulf War.

192. Ha'aretz (Tel Aviv, Hebrew), 4, 5, 6 April 1990. Following Saddam's threats against Israel, the Israeli government reportedly gave assurances it had no intention of attacking Iraq.

193. Quoted in the Jerusalem Post , 12 July 1990; see also Bar'am's comments, ibid .

194. Al Hamishmar (Tel Aviv, Hebrew), 28 December 1990.

195. Yedi'ot Acharonot , Hebrew), 15 March 1991. This may have been Saddam Hussein's way of making sure that, if by any remote chance a missile did hit the reactor, the result would not be a Jordanian Chernobyl.

196. Al Ra'y ,(Amman, Arabic), 20, 22, 24, 26 January 1976.

197. See M. Ayoob, "Regional Sceurity and the Third World", in M. Ayoob ed., op . cit ., pp. 3-26, for an excellent analysis of these problems.

198. See Hong Shi, "China's Political Development after Tiananmen", Asian Survey , 30, 12, December 1990, pp. 1206-17.

199. On these problems see D. Goodman and G. Segal eds., China at Forty; Mid Life Crisis? (Oxford, Clarendon Press, 1989).

200. In October 1990, the Chinese national census revealed the existence of almost a hundred million people who ought not to have been there. For a model discussion of this problem see S. Greenghalgh, "The Evaluation of the One-Child Policy in Shannxi, 1979-88", The China Quarterly , 122, June 1990, pp. 191-229.

201. See K. Forster and O-K Tam, "Chinese Fiscal Reform", Chinese Economic Studies , 24, 1, fall 1990, p. 12.

202. On the problems of central government versus regional resistance in China see K. Liebenthal and M. Oksenberg, Policy Making in China; Leaders,

Structures and Pressures (Princeton, N.J., Princeton University Press, 1988) p. 340ff. Decentralization and regionalism also have strong roots in Chinese history; see Min Tiku, National Policy and Local Power: the Transformation of Late Imperial China (Cambridge, Ma., Harvard University Press, 1989), especially chapter 4.

203. See V. Louis, The Coming Decline of the Chinese Empire (New York, Salisbury, 1984 ed.). The common fear of insurrection among peoples straddling the common border may be one reason behind the recent detente in Soviet-Chinese relations: see L. Homes, "Afghanistan and Sino-Soviet Relations", in Saikal and Maley eds., op . cit ., pp. 135-6.

204. For a good discussion of these problems see R. L. Hardgrave, India under Pressure; Prospects for Political Stability (Boulder, Co., Wewtview Press, 1984).

205. See Ganguly, loc . cit ., p. 62ff., for the background.

206. See Economist , 22 September 1991, p. 22, for an analysis.

207. For the general background see L. Ziring, Pakistan: the Enigma of Political Development (Boulder, Co., Westview Press, 1980).

208. See S. J. Burki, Pakistan: a Nation in the Making (Boulder, Co., Westview Press, 1986), particuarly p. 199ff. for a sophisticated discussion of this problem.

209. See M. P. Singh, "The Crisis of the Indian State", Asian Survey , 30, 8, August 1990, especially p. 817.

210. See for example M. Ziauddin, "Islamizing the Economy: Process seen as Ineffective", Dawn (Karachi, English), 20 November 1983, Business Supplement, pp. i, iv.

211. See S. P. Cohen, The Pakistan Army (Berkeley, University of California Press, 1982), particularly chapters 2 and 5; also Ziring, op . cit ., chapter 12.

212. See W. Barton, India's Northwestern Frontier (London, J. Murray, 1939), p. 286ff., for the origins of this problem.

213. The best single work on the intifada so far is Z. Schiff, Intifada (London, Weidenfeld & Nicolson, 1989).

214. Ha'aretz (Hebrew), 12.5.1989 and 25.1.1990.

215. In India e.g the Chernobyl incident forced prime minister Rajiv Gahndi to give assurances to parliament that no such thing could happen there; Delhi Domestic Service in English, 5 October 1988 (FBIS-NES-88-193,48).

216. Just as these words were written on 10 March 1991, the door of the American Library in Jerusalem was set on fire by a Jewish right wing organization.

217. General Maxwell D. Taylor, quoted in Bacevich, op . cit ., p. 88. On the problem of weapons that are too expensive, too fast, too big, too unmaneuverable, and too powerful to use in low intensity conflict see also M. van Creveld, Technology and War , p. 293ff.

218. Halperin, Nuclear Fallacies , p. 9ff.

219. See van Creveld, Technology and War ,pp. 287-8.

220. For the limitations of modern tactical airpower see J. R. Walker, "The Future of Land/Air Warfare", in RUSI ed., Defence Yearbook 1984 (Oxford, Brassey's, 1984) p. 190ff.

221. G. Blainey, The Causes of War (Melbourne, Sun Books, 1976) p. 83ff.

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Al Hariá (Beirut)

Al Madnia (Ri'ad)

Al Manar (Amman)

Al Manar (London)

Al Mukat el Arabi (Beirut)

Al Musawwar (Cairo)

Al Ra'y (Amman)

Al Sha'ab (Cairo)

Al Sabua Al Arabi (Beirut)

Al Thura (Damascus)

Al Thura al Arabia (Baghdad)

Al Wattan Al Arabi (Beirut)

Al Yaum (Beirut)

Al Ziad (Beirut)

Mena (Cairo)

Roz al Joussuf (Cairo)

Tishrin (Damascus)

English

Dawn (Karachi)

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