

# Evaluating War: Outcomes and Consequences

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## CHAPTER 10

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WAR IS A MAJOR AGENT OF CHANGE and a neglected one. Though war has been studied in a variety of contexts, its role as an independent variable has been curiously ignored. Historians, for example, generally focus on the origins of war or on the diplomacy of wartime and the immediate postwar period. Yet, in the words of one historian, war must be studied “in the framework of economic, social and cultural history as well” (Hans Delbrück, quoted in Michael Howard 1976: x).

Much the same is true of social scientists. Traditionally, the causes and consequences of war have been the central concerns of students of international politics, and major concerns in other disciplines as well. But in recent years social scientists have paid relatively little attention to war’s effects. With the end of World War II and the onset of the Cold War, the focus of scholarly concern shifted to the prevention of war. Thus the new behavioral, theoretically oriented discipline of international relations was concerned at its birth with war causation, deterrence, strategic stability, crisis, and crisis management-with the causes rather than the effects of war. As a review of studies published during the first decade of the *Journal of Conflict Resolution* concluded, “for most JCR contributors, once a war happens, it ceases to be interesting” (Converse 1968: 476-477). Yet the consequences of war have received more attention than the consequences of less extreme forms of international conflict. Whereas the discussion that

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follows concerns international conflict generally, most references and discussion will use examples provided by war.

Scholars and policy makers alike have good reason to learn more about the effects of war and other forms of international conflict. First, if, as Clausewitz suggested, “war is nothing but a continuation of political intercourse with a mixture of other means,” we should evaluate war much as we evaluate those other means. Wars occur frequently and can have massive effects on individuals, groups, nations, and international systems. Thus knowledge of the likely consequences of conflict is necessary for those who would use rational-choice models of conflict initiation. Too often, the analysis of costs, by both scholars and policy makers, involves only those costs that are perceived to accompany cooperation. Similarly, the calculation of benefits is concerned only with those assumed to follow from a successful strategy of coercion or defection from cooperation. Any such logical calculus should include the calculation of all consequences, desired and undesired, and this requires an evaluation of international conflict as a public policy. Scholars and policy makers should therefore ascertain whether a policy of international conflict has accomplished (or is likely to accomplish) its intended goals. This in turn requires an evaluation of costs typically unanticipated or uncalculated (Claude 1975). Indeed, one scholar’s list of the seven factors that strongly influence national leaders in decisions on whether to go to war includes “knowledge or forgetfulness of the realities and sufferings of war” (Blainey 1973: 246). Note that the author assumes forgetfulness to be as important as knowledge, and the relevant knowledge to be only of suffering in general rather than of more specific consequences.

Second, to the degree that war’s consequences are themselves determinants of subsequent international conflicts, an understanding of these consequences is central to a correct specification of the simultaneous casual relationships that lead to war. One review of the anthropological literature on war divides studies into sixteen categories and suggests that these actually comprise eight pairs, where “for each pair, the variable that is responsible for warfare is essentially the same variable that is affected by warfare” (Otterbein 1973: 927). Finally, and most simply, if war is a major agent of social change, as is generally acknowledged, it should be studied in order to obtain an adequate and complete understanding of social change itself.

War’s consequences, as will be seen below, are evident at all levels of analysis; war affects individuals, groups, nations, and international systems.<sup>1</sup> At each level of analysis, however, war’s consequences vary, and these variations can be characterized in a number of ways.

1. Timing of impact. Some consequences, as for social cohesion, may be felt immediately, whereas others may not be felt until long after a conflict is over. The consequences of a chosen method of wartime financing, for

example, may not be fully felt until generations after the war is over. National leaders can force future generations to bear some of the costs of their decisions. Indeed, it has been estimated that most of the monetary cost of America's wars has been borne after the wars have been over (Clayton 1969; U. S. Congress, Joint Economic Committee 1969).

2. Duration. Some effects persist; others are ephemeral. The effects of wartime mobilization on domestic labor, on employment levels, and on the utilization of normally unused labor supplies, for example, are contemporaneous, that is, they are typically felt only during the war itself. Other effects that occur as a result of war are transitory; they are experienced during the war and immediately after the war. A recent study of the effects of war on production suggests that even war losers return within years to the level of production that would have been predicted from extrapolations of prewar trends (Organski and Kugler 1977). Still other effects are permanent. Death is certainly a permanent effect, as are certain injuries. Wartime mobilization typically leads to accelerated technological diffusion, a process that may stabilize after the conflict is over but certainly will not be reversed; there is no return to a prewar state of technology. Similar differences in duration are evident in consequences that occur only after wars end. Some, such as postwar baby booms, are temporary. Others, such as the disappearance of actors from the international system, are permanent.

3. The ways in which wars affect individuals, groups, nations, and international systems can also be categorized. Wars often work changes in the capabilities of actors. The destruction of productive facilities, increased productivity, and technological diffusion, for example, all involve changes in the capabilities of nations and thus in the structure of the international system. Alternatively, wars may change actors' choices, as, for example, when individuals' war experiences shift their evaluation of costs and benefits; war-weariness is one such effect. Finally, wars may entail structural changes for actors, unchosen shifts in the context or environment within which they act. Conscription is probably the most common such wartime experience. Other examples are forced evacuations and ostracism of minority groups.

4. In addition to categorizing the effects of war, whether by type, timing, or duration, it is important to classify wars themselves, for variations in their characteristics determine which consequences occur and to what degree. International conflicts, including wars, vary in intensity and extensity. Some wars last years, even decades; others last only a few days. Some wars involve two nations; others are labeled "world wars." Sometimes fighting is limited; in other cases the scope and degree of destruction is much greater. Typically, it is assumed that larger wars are likely to manifest more consequences and effect more long-term changes.

5. There is also variation in the degree of threat to the warring states. In

some wars, all belligerents feel threatened; in others, an aggressor revisionist state threatens status quo states; and at other times none of the belligerents may be or perceive themselves to be seriously threatened. Indeed, the existence of external threat is an intervening variable in the social-psychological literature that posits a relationship between external conflict and changes in internal cohesion (A. A. Stein 1976).

6. There are also differences in the ways nations wage war. In some cases, states can wage war without extensively mobilizing the society; in other cases, the state mobilizes the entire society for the war effort. Many of the domestic effects of war are indeed a function of the extent of wartime mobilization (A. A. Stein 1980).

7. A conflict's course, and especially its conclusion, can also be important determinants of change. For the participants, wars are resolved by victory, defeat, or compromise (or degrees of these), and each has a different impact. Defeat, for example, typically leads to a regime change in the defeated state.

8. Finally, the prewar attributes of actors may also determine the ways in which those actors are affected by war. The effect of war on a nation's capability, for example, may be a function not only of the characteristics of that war but also of the characteristics of the nation itself. Thus the effects of war on national capabilities may be different for major and minor powers (Wheeler 1975d).

These categorizations of causes and effects suggest the existence of a wide variety of specific consequences occurring in a wide range of wartime and postwar contexts. Many of these can be illustrated. Yet the paucity of sound empirical studies of wars' effects is such that many of their complexities and subtleties cannot be evaluated.

### OUTCOMES OF INTERNATIONAL CONFLICTS

The outcomes of international conflicts vary. Outright victory and defeat are the two most obvious, but others, such as compromise and stalemate, can also be identified.<sup>2</sup> Further, if victory and defeat are assessed by reference to the objectives of the participants, a war's end may find all parties feeling victorious or defeated. On the other hand, a war's outcome may not even involve a resolution of the issues that were originally cited to justify the conflict. Unfortunately, scholars are less subtle in describing the outcomes of wars and other international conflicts than we might wish. Victory and defeat remain the predominant descriptions of a nation's status at the end of a war, and careful distinctions are rarely made. Thus, despite emphasis on the importance of subtlety and careful distinction, a number of scholars have proceeded to label France, Italy, and Poland, as well as the United States, winners of World War II (Singer and Small

1972; see also Organski and Kugler 1977). Similarly, those who have attempted to “predict” the outcomes of past wars also have used a simple dichotomy.

The early empirical attempts to predict war outcomes focused on the most easily quantifiable component: battle deaths. It was hypothesized that some relationship existed between battle casualties-or population losses, or relative population losses-and the outcome of war. Richardson, for example, searched for a threshold for population losses and assumed that “defeat would usually occur when the less populous side had lost in dead some number between 0.05 and 5 percent of its population” (Richardson 1960b: 299). Klingberg found that “there is some evidence that nations in modern times will tend to surrender before they have suffered population losses greater than three or four percent” (Klingberg 1966: 168). Rosen tested Richardson’s hypothesis and found that “in only 2 of 77 cases did states suffer more than 5 percent population loss in battle before yielding,” but “on the other hand, his [Richardson’s] lower limit is definitely disconfirmed: in 23 of 77 cases the defeated party lost less than 0.05 per cent of its population in battle deaths” (Rosen 1972: 179).

Not only has no general relationship between fatalities and victory or defeat been found (Klingberg 1966, Singer and Small 1972), but also there has been no scholarly consensus on the narrower issue of predicting duration or point of termination on the basis of battle deaths, regardless of whether those deaths are suffered by winner and/or loser and without attempting to predict victor or vanquished (Weiss 1963; Horvath 1968; Voevodsky 1969, 1972; Singer and Small 1972).

These works, which attempt to predict war’s outcome by reference to battle deaths, focus on the loser and on the point at which costs lead a nation to give up; in other words, they assume the loser’s role to be decisive in terminating war (Coser 1961).

There is an alternative approach, however, that focuses on the relative strength and power of the warring parties. One recent study of seemingly aberrant cases, four post-World War II international conflicts in which the apparently weaker power won, uses a refined measure of power that combines gross national product, tax effort, and foreign aid received to establish that the superior power was in fact victorious in the cases they describe (Organski and Kugler 1978).<sup>3</sup> To explain the outcome of these wars does not require reference to other factors, they argue, but requires an accurate measure of power that includes governmental extraction capacity.

A cross-cultural study of war in fifty primitive societies from all over the globe, in which each society represents a different culture, suggests that quite different factors are determinative (Otterbein 1970). In this study, military success is defined as the expansion of territorial borders (very

much like Organski and Kugler 1977; compare with the procedure used by Singer and Small 1972), and explained by the degree of military sophistication. The study shows a significant positive correlation between military sophistication and military success. On the other hand, there is no significant correlation between political centralization, a variable which would seem to be related to Organski and Kugler's (1978) extraction capacity, and military success. Indeed, when Otterbein (1970) controls for political centralization, the significant positive relationship between military sophistication and military success is unaffected, and no significant relationship emerges between political centralization and military success even when controlling for military sophistication. Clearly, military sophistication and the strength it imparts, and not political centralization, explain military success in this particular sample of primitive wars.

The work of Steven Rosen (1970, 1972) explicitly interrelates two dimensions of state power: strength and cost-tolerance. Rosen argues that the power of a state involves not only its ability to harm (its strength) but also its willingness to suffer (its cost-tolerance). Thus the superior military or material strength of one nation may be offset by the superior costtolerance of the other, weaker nation with which it is at war. Rosen partially tests this theory in an analysis of seventy-seven wars during the last two centuries (Rosen 1972). In a comparison of warring nations (or coalitions), he finds that greater strength (as measured by governmental revenue) predicts the winner 79 percent of the time. The side that lost a lower percentage of its population in battle won 75 percent of the time, and the side that lost a lower absolute number of lives in battle won 55 percent of the time, while the party with both greater revenues and a lower relative loss of population in battle won fully 84 percent of the time. On the other hand, there were times that the seemingly weaker side was victorious. One-fifth of the wars Rosen studies were won by the weaker power (that is, the side with less government revenue) and 45 percent were won by those suffering a greater absolute loss of lives in battle. Even those nations suffering a relatively greater population loss won, albeit less often (25 percent of the time). Thus it seems that in a minority of cases, superior cost-tolerance can compensate for relative material weakness and result in military victory for the apparently weaker side.

In most cases, wars' outcomes are determined by the strengths of the belligerents, with the superior side winning. Sometimes that superior strength is provided by greater military sophistication, in which case the militarily more sophisticated side will be victorious. When there is no such asymmetry in the levels of military sophistication, the side that mobilizes more resources and inflicts greater damage will win. Occasionally, however, a superior ability to tolerate harm and suffering can compensate for inferior strength and result in military victory.

## WAR AND INDIVIDUALS

Individuals are clearly affected by international conflict, especially war. Some individuals die in war. Others suffer permanently debilitating injuries. Families experience the premature death of a relative. Politically, the most salient effect of war on individuals is on images and attitudes.<sup>4</sup> Individuals are most directly affected by firsthand experiences. Decision makers, for example, are often influenced by their wartime experiences as they continue to grapple with similar issues after a war's end. It is now a commonplace that "the impact of the two world wars on later perceptions show that as generals are prepared to fight the last war, diplomats are prepared to avoid it" (Jervis 1976: 267). Political leaders learn from history (May 1973, Jervis 1976: chapter 6), and it is the last major war that has the greatest impact on them (Jervis 1976: 261).

Although it is possible to illustrate the impact of historical conflicts, it is much more difficult to validate the causal propositions concerning the effects of war on individuals' images and attitudes. There are alternative explanations of behavior that do not include historical experience as a determinant, and it is often possible to offer an alternative explanation for those cases in which the impact of history is claimed to be important. It may be, for example, that historical analogies often are offered as rationalizations for behavior that was not in fact influenced by those historical experiences.

Wars do not affect only those who participate directly. Indeed, "events that are terribly important for the nation (e.g. wars) can have so great an impact that the perceptual predispositions of those who did not participate in the making of the policy will be affected almost as much as those who did" (Jervis 1976: 239). The very "dramatic and pervasive nature of a war and its consequences, the experiences associated with it—the diplomacy that preceded it, the methods of fighting it, the alliances that were formed, and the way the war was terminated—will deeply influence the perceptual predispositions of most citizens" (Jervis 1976: 266). In the case of major wars, anyone who is aware of the conflict can perhaps be considered a direct participant, and policy makers who were old enough to remember the last major war can be assumed to have been affected by it (Jervis 1976: 266).

Wars can thus affect entire generations of individuals, and there is quite extensive evidence that generational attitudinal changes persist long after the original stimulus is gone (Mannheim 1952, Bobrow and Cutler 1967, Spitzer 1973). Such generational effects have led many scholars to search for periodicity in the occurrence of war (J. S. Lee 1931, Moyal 1949, Toynbee 1954, Richardson 1960b, Sorokin 1962, Q. Wright 1965, Denton 1966, Denton and Phillips 1968, Denton 1969, Dewey 1971, Singer and Small 1972, Small and Singer 1979; for a thorough review of this litera-

ture, see Beer 1979). Some suggest that war generations become warweary; that those who remember war's dislocations and suffering wish not to experience them again. As one scholar characterizes war, it is a disease, and all those who have suffered its ravages are provided with an immunity against future infection (Richardson 1960a: 232-236). According to those who posit the existence of war-weariness, future wars begin because memories fade; they are started by a new generation too young to remember or to have lived through the last war (Blainey 1973: 246). Yet the occurrence of World War II so soon after the World War I presents a problem for the war-weariness hypothesis, which one cycle theorist deals with by arguing that World War II was "manifestly something contrary to human nature" (Toynbee 1954: 326).<sup>5</sup>

The most recent empirical investigation of cycles in the occurrence of war (Singer and Cusack 1980) concludes that there is no convincing evidence to support most cyclical interpretations. The authors do find some evidence for the proposition that for major powers defeated in war, the greater the cost of that war in battle deaths, the longer is the interval to the next war-but that the longer that interval, the more intense the next war is likely to be.

Such theories of cyclical behavior have been applied not only to war's occurrence but also to foreign policy more generally. Numerous scholars have argued that cycles exist in American public opinion concerning foreign policy, as well as in the actual course of American foreign policy, which, they suggest, shifts between extremes of international involvement and isolationism. These shifts between isolation and involvement are often related to war experiences (Klingberg 1952, Perkins 1968, Hoffmann 1968, Roskin 1974, Russett 1975, Russett and Hanson 1975, Russett and Nincic 1976, Klingberg 1979). It is often argued that the dissatisfactions stemming from American experiences in World War I led to the isolationism of the interwar years and to the retrospective belief of many Americans that the nation's involvement in the war had been a great mistake. The experience of World War II, on the other hand, led to a commitment to prevent the next great war through greater involvement in international affairs. Many now suggest that the Vietnam experience may lead to a new isolationism, to a rejection of the involvement and interventionism that followed World War II. "Each elite American generation comes to favor one of these orientations by living through the catastrophe brought on by the application and absurdurn of the opposite paradigm at the hands of the previous elite generation" (Roskin 1974: 563). Typically, these catastrophes are wars, which thus play a central role in the American oscillation between extreme involvement and isolation.

While scholars tend to agree that wars may broadly affect generational attitudes toward war itself as well as more general perceptual orientations, they disagree on the degree of specificity of attitude changes. A survey in

1976 of Americans in “leadership” positions focused on detailed attitudes toward the Vietnam war and on the lessons and prescriptions that people derived from it. In their reports of this study, Holsti and Rosenau (1979, 1980) contend, and demonstrate with the aggregate results of a survey, that there were several different belief systems, each widely held, concerning the American experience in the Vietnam war. Briefly, they divide American leaders according to their positions on Vietnam early in the war and again in the war’s late stages, thereby distinguishing consistent supporters and consistent opponents, converts (in both directions), and several types of “ambivalents.” Individuals within each group, they show, shared particular views about the reasons for the American failure and drew similar lessons from the experience. But between groups there were very sharp cleavages, with each group believing the war had very different consequences for the United States and the world system, and drawing very different lessons.

While there is general agreement that Americans should learn from past mistakes, this consensus breaks down once attention focuses on specific substantive lessons. Disagreement pervades all levels of thinking about how the lessons of Vietnam should guide the future conduct of American foreign policy, from the broadest questions of “grand design” through “grand strategy” and “tactics.” [Holsti and Rosenau 1979: 49]

The authors note that we do not have available the sort of controlled experiment that would make it certain that it was the war, rather than other international or domestic events, that produced this fragmentation of belief systems. Nevertheless it does appear that the “lessons” learned varied to the extent that original attitudes toward the war varied during its course. In situations where varying attitudes toward war involvement exist, individuals are likely to assimilate events to their pre-existing beliefs, which may vary by class, occupation, or ethnic group as well as by age.

An examination of mass opinion surveyed at different times from 1973 to 1978 (Kriesberg and Klein 1980) indicates that whereas age and war generation were important discriminators of opinions favoring or opposing military spending in 1973 and 1975, by 1978 the power of these variables to discriminate attitudes had declined significantly. They suggest that the impact of the Vietnam war on mass attitudes was fading rapidly, being replaced by general increases in conservatism and anti-Soviet sentiment. Thus while wars may affect the attitudes held by whole generations, it is clear that the effect does fade over time, and that we know little about the determinants of the “half-life” of such attitude changes.

Wars affect individuals’ political attitudes and, most important, their attitudes toward war itself. Thus one effect of past wars is that they determine aspects of future wars. The timing and conditions of future wars are sown by past wars. Although not prevented, subsequent wars are dif-

ferent, yet the statement “Those who remember the past are condemned to make the opposite mistake” (Jervis 1976: 275) probably is still too simple.

### WAR AND SOCIETY

Most literature on the consequences of war is devoted to war’s effects on individual societies. Typically, these works focus on war and the state, war and the economy, or war and social cohesion. Discussions of each of these follow.

### WAR AND THE STATE

War is generally recognized as a determinant of the origins, development, consolidation, and viability of the state. There are two general explanations of state origins, and in both, war plays a major role.<sup>6</sup> The first group of theorists stresses the importance of conflict and the coercive nature of state origins. They all argue that increased political centralization and the state itself emerged from competition, conquest, and coercion, although some emphasize intersocietal conflict and conquest while others point to intrasocietal conflict.

A somewhat different explanation is that centralized political coordination emerged not from competition and coercion but from voluntarism and integration. Briefly, this set of theories stresses the importance of centralized political control as the only means by which societies can meet certain demands and fulfill certain needs. One of the most basic of the benefits provided by central governments is security, and some theorists suggest that the state arose precisely because of the threat posed by war. In other words, the state is a political organization that provides collective goods, including protection (Lane 1958). It provides security from internal dissension by “producing” justice and provides protection against external threats by “producing” defense (Ames and Rapp 1977; see also Lane 1942). Communities with central governments are created in order to transcend the anarchic state of nature that is characterized by conflict among all individuals because governments are the only agents that can provide internal peace, limit armed conflict to confrontations with outsiders, and limit the degree of danger such external conflicts pose. Thus the threat of war makes the state, which may then make wars.

Despite problems with both sets of arguments,

there is little question that, in one way or another, war played a decisive role in the rise of the state. Historical or archeological evidence of war is found in the early stages of state formation in Mesopotamia, Egypt, India, China, Japan, Greece, Rome, northern Europe, central Africa, Polynesia, Middle America, Peru, and Colombia, to name only the most prominent examples. [Carneiro, 1970: 734; also Wesson 1967]

Success in war is one of the general conditions that predicts state-making (Tilly 1975a: 40). War is clearly a mechanism of state formation, and whether voluntaristic or coercive, extends the area of “peace.”

An extension of these arguments is the claim that war is important in determining the size of the state (that is, territory encompassed). If states are envisaged as “firms” that provide the “public good of “protection,” then “economies of scale” may exist that suggest a range of optimal state size. Changes in military technology, for example, can alter the range of optimal state size and thus explain the consolidation of political and military power in Europe in the early modern period (Bean 1973, Morton 1969). The increased effectiveness of the infantry resulted in a rise in the size of armies, and involved “a shift in the production function of defense so that the minimum efficient size of state was increased and the centralized state was given a greater advantage over the decentralized state” (Bean 1973: 220). In other words, changes in the art of war can change the advantages and disadvantages of scale and thus lead to changes in the amount of territory controlled by the state. In this way, war becomes responsible not only for the rise of the state but for its growth and development as well. Indeed, since neolithic times the typical size of political units, whether states or empires, has shown a long-term tendency to increase (Hart 1948, Naroll 1967, Taagepera 1968, Marano 1973, Ogburn 1964, Carneiro 1978).

The occurrence of war and changes in the art of war are responsible not only for increasing the size of the territory that states encompass, but also for increases in the scope of the state. War preparation and direction are tasks reserved to the central state apparatus which require the extraction and utilization of resources. Governments expend more resources during war than they do in peacetime, and wars thus act as a persistent stimulus to increase the fiscal burden (Tilly 1975a: 54; Ardant 1975). Large wartime increases in state expenditures are followed by some postwar shrinkage, but to a plateau higher than the prewar level. This has been dubbed the “displacement effect” (Peacock and Wiseman 1961). Postwar governmental expenditures exceed prewar ones, and the difference cannot be fully accounted for by increased war-related costs such as pensions and debts. War thus acts as a major determinant of net increases in the size of / the state, where size refers to relative proportion of national product expended by the government (Peacock and Wiseman 1961, Kendrick 1955, Fabricant 1949, Musgrave and Culbertson 1953, Pryor 1968). There also is evidence that military expenditures and/or the size of national armed forces remain at a postwar plateau that is higher than the prewar level. This so-called “ratchet effect” is reported for United States wars by Russett (1970: 2-5), but does not apply to the post-Vietnam war period (A. A. Stein 1980).

The existence of a war-induced displacement effect is not questioned,

but the explanation for it is a matter of some dispute. Peacock and Wiseman (1961) attribute the growth in government expenditures to increased popular tolerance of added taxation in wartime, a tolerance that spills over into the postwar period. Critics have pointed out that war need not be financed by added taxation and extraction (Pryor 1968, Hamilton 1977, M. A. Robinson 1955, Friedman 1952).<sup>7</sup> Yet the historical record reveals that war has played a central role in the development of Western European systems of taxation and of specific taxes as well (Ames and Rapp 1977, Tilly 1975a: 42). Indeed, not only are there often wartime increases in taxation, but there is a generally greater reliance on direct taxation for increased extraction; thus the proportion of direct taxes to indirect taxes increases in wartime (A. A. Stein 1980).

As important as the financial growth of the state resulting from war is the attendant relative growth of state powers. The state is a monopoly supplier of defense and is thus the coordinator of societal activities in the war effort. The scope of state control increases as the central state becomes involved in activities it has previously not attempted to regulate. As a monopoly, the state can affect the extent to which monopolies prevail in other fields of production (Lane 1958: 416). Wartime increases in the size of the central government thus involve an increase in governmental concentration relative to the size of local governments (Peacock and Wiseman 1961, A. A. Stein 1980). In addition, the increased size of government may potentially lead to increased concentration in other areas as the central government expands the scope of its control. An analysis of ten centuries of European history that compares historical epochs alternatively characterized as “laissez-faire” and “public control” concludes that “during periods of laissez-faire, the incidence of wars appears to decline and it increases during periods classified as government control” (Crowley 1971: 41; also see Marr 1974).<sup>8</sup>

War is thus linked to the origins, development, consolidation, absolute growth, and relative growth of the state. As Charles Tilly suggests in his introduction to a collection of essays on *The Formation of States in Western Europe*, “war made the state, and the state made war,” and “preparation for war has been the great state building activity” (Tilly 1975a: 42, 74).

Yet war has destroyed states as well as built them. For many states, a defeat in war has meant their complete disappearance, as is discussed below. Victors rarely change regimes as a result of their participation in war, but defeat in sustained war between major powers since 1850 has almost invariably meant such a change (see Table 10-1). Indeed, the application of evolutionary models suggests that success or failure in wartime determines processes of societal selection, a social survival of the “fittest” (Otterbein 1973: 943-944). In other words, intersocietal selection operates through the rise and fall of states, and intrasocietal selection through the strengthening or collapse of domestic regimes.

**Table 10.1. Regime Change and the Outcomes of Sustained War between Major Powers**

	Winners	Losers
Regime change	0	9
No regime change	10	0
<i>The Major-Power Wars</i> *	<i>Winner(s)</i>	<i>Loser(s)</i>
Franco-Prussian	Prussia	France
Russo-Japanese	Japan	Russia †
World War I	Great Britain	Germany
	France	Austria-Hungary
	United States	Russia
	Italy	
	Japan	
World War II	United States	Germany
	U.S.S.R.	Japan
	Great Britain	Italy
		France

\* Wars in which there was a clear loser (that is, a nation that surrendered, was occupied, or lost territory).

† Classified as a regime change because of the Revolution of 1905, the writing of a new constitution, and the czar's being forced to establish a Duma. This is a marginal case since the chief of state (the czar) did not change.

## WAR AND THE ECONOMY

The relationship between war and progress, especially economic progress, has been the subject of much debate. To some, war is the engine that propels such economic change, indeed, that drives civilization itself. To others, however, war is the antithesis of all that they believe economic progress to represent (Russell 1936, D. Dunn 1974, Deane 1975, Winter 1975). Unfortunately, the arguments in this debate are clouded by moral judgments and definitional imprecision. Progress, along with certain other concepts, is such a vague explanandum that many scholars have abandoned it altogether. For in using it, "we attempt to explain so much that we end up explaining nothing" (Tilly 1975b: 617). By disaggregating the elements of the debate, however, it becomes much easier to get a handle on the problem of the actual relationship between war and economic progress.

Those who posit that war hinders economic growth argue that the main direct economic effect of war is destruction (Marwick 1968, 1974; C. W. Wright 1943): people are killed and productive facilities destroyed. In addition to such outright destruction, there is a wartime loss of production due to the transfer of facilities from the production of peacetime goods to the production of equipment that consumes rather than reproduces capi-

tal.<sup>9</sup> Variation in the degree of all of these wartime losses of human and physical capital partially determines differences in the amount of lost potential production.

Labor and capital are not the only factors of production that can be destroyed in war, for the advanced technology of modern warfare can make possible the physical destruction of the land as well. The environmental effects of the American devastation of Indochina are severe and long-lasting, and clearly affect the prospects of future economic progress there (Westing and Pfeiffer 1972, Neilands et al. 1972, Stockholm International Peace Research Institute 1976). Certainly the effects of the wartime use of nuclear weapons would affect economic recovery, if recovery would in fact be possible (Dentler and Cutright 1963, National Academy of Sciences 1975).

War also adversely affects the economy in less direct ways. The wartime destruction of capital, for example, is not only direct, but indirect, via inflation and debt or the sale of foreign investments to finance the import of war materiel. In addition, the wartime disruption of international trade harms economic welfare by diverting economic resources from their most efficient uses. Finally, some scholars argue that the increased governmental control of wartime destroys individual initiative, which in turn retards economic progress (C. W. Wright 1943: 14).

Others, however, argue that war can serve to stimulate economic growth. Proponents of the view that war plays a constructive role in economic development point to a largely different set of factors. First, they emphasize that war leads to the utilization of unused capacity and brings underutilized factors into the production process. There is, for example, increased participation in the labor force by women and minorities in heterogeneous societies during wartime (A. A. Stein 1980). Similarly, wartime mobilization once served to draw peripheral geographical areas into a national market (Tilly 1975a: 73). In addition, wartime increases in demand and resource coordination can lead to a more efficient utilization of factors of production by increasing concentration and scale and thus increasing productivity as well. Indeed, wartime mobilization leads to increased technological innovation and, more importantly, to technological diffusion, both of which promote growth.<sup>10</sup> In a variety of ways, war also involves a redistribution of wealth and income, and this too promotes growth (C. W. Wright 1943, A. A. Stein 1980). Finally, the disruption of international trade leads to substitution for imported raw materials and to the development and protection of infant industries producing previously imported goods. This too is beneficial to future growth. Biersteker (1979) discusses the experience of Biafra during the Nigerian civil war.

Historical attempts to disentangle the argument between those who claim that war promotes economic growth and those who see only its destructive capabilities have not been very successful. Whereas it has been

possible to refute some of the more extreme arguments,<sup>11</sup> it remains the case that examples of war as both growth-promoting and -retarding abound (Wheeler 1975d; see also Lane 1942). Again, disaggregating the arguments rather than discussing war and economic progress more generally, is essential to understanding the economic effects of war. Unfortunately, a problem remains in that these two schools rarely address one another directly; their only direct disagreements concern the relationship between war and technological innovation and the effects of the disruption of international trade. Even should these direct disagreements be resolved empirically, we would not be much closer to a true evaluation of war's economic effects, for the two camps place their primary emphases on different factors. The destructivists point to capital destruction, an effect of war that cannot be disputed. The constructivists, on the other hand, focus on the increased demand and productivity generated by war, an effect that also clearly occurs. In other words, war both promotes and retards growth, and we can make and validate hypotheses about specific positive and negative effects of war. Moreover, the variable properties of war itself affect the degree of positive and negative consequences. To try to step back and reaggregate these diverse and divergent consequences into an overall assessment of war's effects on economic progress would require the evaluation of counterfactual arguments and would require extensive empirical work in order to specify intervening conditions.

#### WAR AND SOCIAL COHESION

It is often assumed that war increases the internal cohesion of the warring state. The belief in this relationship is so strong that it has frequently been suggested that insecure political elites sometimes initiate war in order to increase domestic unity and secure their positions (Rosecrance 1963).<sup>12</sup> Yet the opposite claim, that war leads to social disorganization and internal dissension, even to revolution, has also been mentioned, although less often.

A review of the theoretical and empirical work on this problem suggests that both arguments have validity (A. A. Stein 1976, 1980; see also Stohl, Chapter 7 of this *Handbook*). The contradiction arises from static analyses of the relationship between war and cohesion. A dynamic analysis, on the other hand, suggests that a more complex relationship in fact exists. War can indeed increase internal cohesion, but only under a variety of specific conditions, including the existence of an external threat to the society. Where no such threat exists, cohesion does not increase.

In addition, the very process of waging war serves to decrease societal cohesion, regardless of any original increases in cohesion that may be engendered by the existence of an external threat (A. A. Stein 1980). The increased governmental extraction that accompanies war (that is, the process of mobilization) leads to a decrease in social cohesion. Historically,

“the most serious and persistent precipitant of violent conflicts between European state-makers and the populations they attempted to rule were attempts to collect taxes” (Tilly 1975a: 54; Ardant 1975). Since increased extraction, including even the creation of new taxes, is a hallmark of war, it is not surprising that there is a “tendency of revolutions to occur in conjunction with the preparation and the termination of war” (Tilly 1975a: 74, Skocpol 1976).<sup>13</sup> In other words, the very process of providing community defense during wartime leads to a decrease in cohesion even when there exists an external threat to that community.

The net effect of a war on social cohesion thus depends on the character of that war. When an external threat exists, there is an initial increase in social cohesion following the onset of war. The wartime mobilization process, however, tends independently to decrease the level of social cohesion. The existence of the external threat may have an additional mitigating effect in that marginal decreases in the level of cohesion per unit of mobilization may be less than they would be during an otherwise similar but a nonthreatening war. When no external threat exists, mobilization will immediately lead to a decrease in the level of social cohesion (A. A. Stein 1980).<sup>14</sup>

### WAR AND THE INTERNATIONAL SYSTEM

“From the point of view of the international system . . . war appears as a basic determinants of the shape the system assumes at any one time” (Bull 1973: 119). Indeed war may be the characteristic condition of the state system (Tilly 1975a: 52; see also Finer 1975). Most fundamentally, wars affect the distribution of power in the international system and they do so in a number of wars.

It is war . . . that help[s] to determine whether particular states survive or are eliminated, whether their futures remain the same or are changes, whether their people are ruled by one government or another . . . whether there is a balance of power in the international system or one state becomes preponderant. [Bull 1973: 118]

This argument, that wars play a major role in the distribution of power, is a central one. Modelski, arguing in support of this conventional wisdom, argues that war justifies and legitimizes the international status system and, indeed, that “war ‘causes’ the Great Powers” (Modelski 1972a: 48).<sup>15</sup> He has shown, for example, that the outcomes of most wars in the last five centuries have involved the rise of a new great power or the decline of an old one (Modelski 1972a: 51, 1972b: 292, 1978a: 48). More recently, Modelski (1978b) argues that in modern times a succession of world powers have shaped the political system, and that these powers and the constitution of the global political system are determined by global wars.

Modelski further demonstrates the importance of war by compiling a list

of the great powers that existed between 1815 and 1970. The criteria for inclusion are formal ones: participation in the Concert of Europe, permanent membership in the Council of the League of Nations, and permanent membership in the Security Council of the United Nations (Modelski 1972b: 144). Four of the nine nations that he lists actually lost their great power status during this period, all as a result of war (Austria-Hungary in 1918, Italy in 1943, Germany and Japan in 1945). This finding is mirrored by Singer and Small's (1972: 24-26) categorization of major powers and by Kohler's (1975: 57) classification of imperial leaders, both of which show that states that have lost their positions as great powers or as imperial leaders have done so as a result of wars. Clearly, wars can lead to the loss of great-power status and to the dissolution of empires.

The degree of such war-effected change is a function not only of the course and termination point of the war, but of the assimilative process of the post-confrontation period. Charles Doran (1971) studies the process of assimilation that follows a thwarted bid for hegemony by one or more states, and defines assimilation as a collective process "in which a defeated aggressor state comes to reject . . . its status of belligerency, at least with respect to former issues and opponents" (C. R. Doran 1971: 24), and in which the other major powers accept a new role for the defeated state in the postwar international system. He argues that one of three possible outcomes—overassimilation, underassimilation, or controlled assimilation—will follow such an unsuccessful bid for hegemony. The outcome may entail the disappearance, completely or from great-power status, of the defeated aspiring hegemon (overassimilation), the assertion of a new hegemonic attempt by the underassimilated aspiring hegemon (underassimilation), or the establishment of a stable international order without the overt or covert instabilities entailed in the other two outcomes (controlled assimilation). Doran argues that assimilation is a function of interactor systemic changes (which include the material changes wrought in wartime and the postwar adjustive actions taken by the winners and losers), of intra-actor organic changes (including relative development and growth rates), and of changes in the character of the regimes.<sup>16</sup>

This impact of war on the great powers also affects subsequent war. Modelski (1972a, 1972b, 1978a) argues that war is a great power activity and that wars disproportionately involve great powers—points well-established in the literature (Russett and Monsen 1975, Stuckey and Singer 1973, Weede 1970). Thus the dissolution and creation of great powers in the wake of global war can affect the prospects for future war, its time of occurrence, and its scope. In addition, Kohler (1975) argues that imperial states do become more peaceful (that is, are involved in fewer wars) after they lose their empires.

Two recent empirical studies concerned with wars' effects on national power and the distribution of power in the international system challenge

this conventional wisdom. Henry Barbera (1973), the author of one such study, couches his argument not in terms of power but of development, and uses as his indicator of development the number of telephones per capita. He finds that the occurrence of the two world wars of the twentieth century had little effect on various aspects of the international hierarchy of development. Barbera controls for prewar levels of development and for the nature and degree of participation in war, and rarely finds the wars to have had much effect at all, especially on the developed nations. He does not distinguish between winners and losers, but instead contrasts nations by the duration of their participation (number of years) and by whether or not they were occupied, and finds little difference across these groups.

The second recent empirical study, that of Organski and Kugler (1977), concludes that the occurrence and outcome of war make very little difference for national power. By comparing the actual gross national products of belligerent nations following the two world wars of the twentieth century with the expected GNPs for those nations as extrapolated from prewar data, the authors conclude that in the long run wars make no difference. The power levels of winners and of neutrals are affected only marginally; defeated nations suffer only short-term losses and return to their expected position in fifteen to twenty years. In other words, "the power distribution in the system [soon] returns to levels anticipated had the war not occurred" (Organski and Kugler 1977: 1365).

Unfortunately, the conclusions of the latter study are questionable. The steps taken in order to assure intertemporally comparable units limit the value of the findings. To assure comparability, for example, certain nations were dropped from the study. Austria could not be included since the Austro-Hungarian Empire was dismembered, and Austria was absorbed by Germany prior to the outbreak of World War II—clearly a loss of national power. On the other hand, nations that underwent territorial or governmental changes, such as Germany, were retained in the study, but their 1970 boundaries were used throughout in order to insure comparability. Thus only West Germany is actually included and yearly estimates were made for what would have been West Germany's GNP in the years prior to 1945. East Germany, though the most prosperous of the East European states, is poorer than West Germany and would not compare so well with the extrapolated prewar trend. Such exclusions for the sake of insuring comparability have the effect of tipping the evidence in favor of the authors' hypothesis.

In the end, the study's findings show only that several particular pieces of territory and their resident populations recovered their material capacity to produce, and returned in fifteen or twenty years to the level that they would have been expected to reach if no war had occurred. This

“phoenix factor” is an important finding, but it should not be confused with an argument that the power of the state returns to its former level. Some of the states in question (Austria, Hungary, West and East Germany) are in fact significantly smaller than their predecessors. The “births” and “deaths” of states are themselves an effect of war (Modelski 1972b). General wars have often been the principal means of boundary realignment in the international system (Tilly 1975a: p. 52; see also Finer 1975). The effects of the final solution to the German problem in the twentieth century, that of division, can hardly be ignored. Moreover, the nature of the government, its orientation, and whether it does or does not maintain an army, are also excluded from Organski and Kugler’s purview. Yet this is one of the determinants of the assimilation process discussed by Doran, and as has been argued above, defeat in sustained wars usually involves a regime change in the defeated nation.

It is important to confront—as Organski and Kugler do—the argument that postwar American aid may have been responsible for the recovery rates of both defeated and victorious states following World War II. C. R. Doran (1971) argues, after all, that the postwar adjustment decisions made by the victors are a determinant of the assimilation process. Organski and Kugler’s procedure is to correlate the annual recovery rate (changes in relative growth) with American foreign aid (using various lags). Correlating total aid by year with annual growth rates for all recipient states grouped together, they find no significant relationship between high-aid years and subsequent high growth. Furthermore, they note that there was a perfect inverse relationship between the total amount of aid received by each of the five major recipient states and the states’ growth rates. Nevertheless, the matter is not completely settled, because this kind of empirical test misses the subtle examples provided by Doran of the range of assimilative techniques available to the victorious powers, specifically those made available after World War II. The forms of actual assistance varied; for example, the greatest American assistance to Japan came not in the form of direct aid, but from allowing the Japanese to undervalue the yen systematically and so enjoy export-led growth. The postwar decisions made by the victors do matter in the postwar assimilation process.

Wars affect the international system not only by affecting the number of great powers, but also by affecting the total number of actors in the international system. “Most of the political units which disappeared perished in war,” which in Europe meant that “the thousand state-like units spattering the political map of fourteenth-century Europe dwindled to fewer than thirty by World War I,” and that “war [thus] shaped and reshaped the European state system” (Tilly 1975a: 42, 76, 75). The historical increase in the size of political units discussed above implies a decrease in the number of autonomous political units. Indeed, the twelve millennia since

neolithic times have witnessed a long-term decrease in the number of autonomous political units, a political evolution that, according to one author, has been driven by war (Carneiro 1978).

In addition, war has been responsible not only for the disappearance of states but also for the appearance of new ones. "There have been three main waves of new state making since the late eighteenth century," and "each wave has come with the collapse of empires" (Lyon 1973: 26-27). Two of the three waves are directly related to war: both world wars in the twentieth century involved the creation of large numbers of states as the wars led to the collapse of empires with major consequences for international order. Twenty new nation-states joined the interstate system between 1918 and 1922, and another fourteen came into being in the years from 1944 to 1949.<sup>17</sup>

Clearly, wars profoundly affect the international system. Their consequences for nation-states, especially those effects involving states' capabilities and choices, have international repercussions. More directly, wars can fundamentally change the international system by affecting the number of actors in the system and their relative power.

## CONCLUSION

Destruction is a part of war, perhaps its most salient feature. War kills people, destroys capital, and damages the land. War can also destroy the political and economic institutions, both domestic and international, that organize and sustain societal activity.

Yet war also has a rejuvenating character. The demands of war and wartime mobilization, whether for increased production or greater social coordination, are generated in a context that rewards successful adaptation and makes rapid change possible.

Wars affect bystanders as well as participants. The systemic changes wrought by war, for example, affect all nations in the system, regardless of whether they actually participated.

Different perceptions of the long-term effects of war are at the heart of many of the literature's key debates. There is no question but that numerous effects occur during wartime. People die; nations are victorious and are defeated; indeed, nations die and are born. The long-term consequences are more elusive, however. All people die eventually, so it is possible to argue that war only hastens a certain fate. Thus the critical question is whether war creates fundamental transformations or whether it acts merely as an evolutionary stimulant, reinforcing extant trends and speeding the emergence of already inevitable occurrences. In other words, do wars involve real discontinuities in historical development or do they simply cause ripples in a basically continuous process of a development that is fueled by other determinants? Unfortunately, the currently available em-

pirical work is hardly adequate to the task of determining if wars affect, for example, the course of economic development or if they effect changes in the international balance of power, or if wars merely lead to short-term distractions from long-term dynamics. The characteristics of both wars and the nations engaged in them are important in this regard, and this potential relationship certainly deserves more systematic study.

The greatest single weakness in the literature on the various effects of war, whether on the international system, the state, or the individual, is its paucity. Despite the existence of numerous references to and examples of war's consequences, it is not even possible to illustrate all of the possible combinations discussed in the introduction. To limit this discussion to those works that offer adequate empirical validations of the various propositions concerning war's effects would only emphasize this problem, for much of the work on the consequences of war is hazy and impressionistic. Too often, too little is known even to unravel the most basic of the scholarly disagreements that exist in this literature.

A second problem with this literature is that it does not constitute a sufficient base for the study of war as a public policy. If wars represent purposive behavior, as is generally assumed, then discussions of their effects should both evaluate war's utility in achieving desired outcomes (intended consequences) and assess its unintended and often unanticipated consequences. For the most part, scholars do a better job with the latter; most of the effects they discuss are not those that constitute reasons for going to war in the first place. Knowledge of these side-effects may nonetheless be quite basic to a rational decision on the question of whether or not a nation should fight. In addition, such knowledge becomes very useful once the decision to go to war has been made, for many of these effects are consequences of the mobilization that must then be planned. Thus it would be more useful if these discussions were more conscious of war's side-effects as being unintended consequences of deliberate policy rather than treating them as interesting but inevitable wartime and postwar occurrences.

More striking, however, is that war's intended consequences are virtually ignored. It should be relatively easy, for example, to determine if a nation accomplishes what it set out to do by going to war—to acquire territory, prevent territorial loss, or some other goal. Yet so basic a determination has not been systematically made, perhaps because it is so obvious as to be completely overlooked. Scholars never fail to label warring nations as winners or losers, but they almost always fail to mention whether these nations achieved what they desired by going to war in the first place.

War is a public policy with enormous effects. Yet it is the least evaluated of public policies, when it should perhaps be the most carefully assessed. Scholars and politicians alike have failed to assess war's effectiveness and war's effects. Politicians may perhaps have reasons for wishing to avoid such evaluations, especially public ones. Scholars have no excuse.

## NOTES

1. For bibliographies of the effects of war, see Marwick (1974), K. L. Nelson (1971), Stein (1976, 1980), Winter (1975b), *War and Society Newsletter* (1973-present).
2. One political scientist has in fact proposed a six-part typology of conflict resolution, suggesting a fair degree of subtlety in the range of conflict's outcomes (K. J. Holsti 1966, 1977).
3. Organski and Kugler (1978) analyze six post-World War II international conflicts, counting three Arab-Israeli wars as one international conflict.
4. There are other effects of war which are not reviewed here. There is a very large literature dealing, for example, with psychological reactions to combat and stress (see the discussion and references in Williams and Tarr 1974: 214-221 and in Lang 1972: 53-82, 201-204). It includes studies of postwar repercussions for soldiers (Lifton 1973, Helmer 1974), and psychological effects endured by those interned in concentration camps, prisoners of war, and noncombatants who survive large-scale countercity attacks (Bettelheim 1960, Lifton 1976). For a discussion of other human costs of war, see note 9 below.
5. Some argue that the experience of twentieth-century wars has led to the rise of a quite modern attitude of "rejection of the concept of war as a means of resolving international disputes" (Brodie 1973: 274). This is not to say that distaste for war is anything new, for study of the intellectual history of warweariness and war cycles should "disabuse [one] of the notion that a feeling of distaste for war and of repudiation of its awful characteristics and consequences is a uniquely recent development" (Brodie 1973: 230). According to some, however, the movement toward a rejection of the legitimacy of war, a phenomenon that is in evidence in those areas that have experienced the ravages of war in this century most, is new. Adda Bozeman (1976a, 1976b) in fact argues that this twentieth-century attitude may be a western phenomenon that is not paralleled elsewhere.
6. For a general discussion of the systemic sources of domestic politics, see Gourevitch (1978). Reviews of the literature on state origins can be found in R. Cohen (1978), Service (1975, 1978), Fried (1978), H. T. Wright (1978), and Carneiro (1970). The views of social Darwinists are briefly summarized by Naroll and Divale (1976: 100-101). A classic statement of conquest theory is by Gumpowicz (1963, reprint of translation of 1905 revision of 1885 original). Conquest theories are examined critically by R. Holsti (1913), W. C. MacLeod (1924, 1931), and Lowie (1927).
7. Modern governments need not extract additional taxes to pay for war because they can simply print more money and generate inflation-an indirect means of taxation. In general, however, wars are never financed solely by inflation, but by at least some increase in taxation. Further, large governments that control a sizable portion of the social product can simply transfer already extracted resources for use in waging war. In such cases, war's end may bring a "negative displacement effect" in that the postwar proportion of social product expended by the state is smaller than that expended prior to the war (A. A. Stein 1980). Waging a war without mobilizing extra resources may lead to

a postwar shrinkage of government since there is often a popular expectation that a reduction in government size will follow the war. When war is fought without the mobilization of extra resources, it can only be accomplished by a net decline in other governmental expenditures.

8. Specific economic and political manifestations of increased state control are widely discussed (Corwin 1947, Fraser 1973, Hurwitz 1949, Lerner 1940, Mowry 1941, Polenberg 1972, Swisher 1940, Satow 1972, Stohl 1976).
9. Numerous attempts to calculate the human capital losses of war are summarized by Kiker and Cochrane (1973). The specific costs to the United States are discussed in C. W. Wright (1943), and long-term demographic effects are discussed by Hulse (1961) and Otterbein (1973), as well as in some of the essays in Fried, Harris, and Murphy (1968). The human capital losses of war need not only involve actual wartime casualties. The economic and social ravages of war can affect health with consequent losses in human capital. For example, the infant mortality rate in Germany from 1945 to 1949 was much higher than that recorded for 1935 to 1939. If we treat those "excess" infant deaths as caused by disruption resulting from the war, they amount to over 130,000 war-caused deaths. And of course Germany by no means represents the worst case from World War II, only the easiest to document (data from U.N. Demographic Yearbook 1966: 292). Increased incidence of birth defects, child mortality, and cancer as a result of war and the weapons used against civilian populations can have even longer-term effects. Arguments against viewing wartime casualties as losses all come from nineteenth-century perspectives on evolution (Russell 1972, reprint of 1936 original; D. Dunn 1974). Similarly, the cost entailed in the destruction of physical capital can also be disputed (see the discussion below of Organski and Kugler 1977). Indeed, some argue that the relative economic advantage currently possessed by Japan and West Germany is due to the destruction of their physical plants during World War II. This destruction allowed them to completely rebuild and they therefore possess a production infrastructure that is younger and more modern than that possessed by the victorious nations of World War II.
10. The impact of war on scientific and technological development is greatly debated and difficult to disentangle (Russell 1972, reprint of 1936 original; Nef 1950; Morton 1969; MacLeod and MacLeod 1975; Price 1961: 103-105; Rosenberg 1969; Simonton 1976). On the whole, however, it appears that war has little systematic effect on the overall level or rate of scientific development.
11. One of the more extreme arguments is made by Sombart, who claims that the economic stimulus of war was central to the development of capitalism. This position was attacked by Nef (1950), and their debate is reviewed by D. Dunn (1974) and Winter (1975a).
12. Of course this is an old hypothesis. For some older references to it, see the citations in Rummel (1963) and Tanter (1966). Despite many subsequent analyses, the evidence remains ambiguous; see Stohl's essay in this volume for a full review.
13. There are also, of course, nonrevolutionary manifestations of decreased cohesion (Brooks 1969; J. E. Mueller 1971, 1973; Perkins 1971; E. H. Powell

1970; Schaich 1975; Stohl 1973, 1975, 1976; Tanter 1969). Indeed, such manifestations need not always involve political acts. For an extended discussion of the various manifestations of decreased cohesion and their interrelationships, see A. A. Stein (1980).

14. Changes in cohesion can also be effected by wartime changes in the state and economy. Such feedback effects of these other war-related changes on domestic cohesion are rarely treated, though it is clear that the net effect of war is decreased cohesion as a function of mobilization (A. A. Stein 1980). The impact of differential war outcomes (victory or defeat), is also rarely treated, but there is some reason to expect decreased cohesion in either case (Stohl 1976) and greater decreases in losing nations.
15. Similarly, Modelski has argued elsewhere (1978b) that because the nationstate has proved to be the most effective unit of political organization for waging war, it has been for some time the basic unit of world order.
16. The long-term societal effects of war may also be affected by whether the outcome results in a plural international system or in a universal empire. Wesson (1976, 1978) argues that these different systems have different implications for domestic political rule and for the prospects for societal innovation or decay.
17. Calculated using data from Singer and Small (1972: 24-29; see also Albertini 1969). The most recent phase of state-creation since 1960 (more than sixty new states) is more distant in time from World War II, but stems from a collapse of empires that is arguably still a result of that war.

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