

# Explaining war

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This paper proposes a materialist synthesis of theory, towards a comprehensive explanation of war in stateless societies. War by states is discussed, but only as the end point of the range being examined.

War itself is difficult to define. Elsewhere (Ferguson 1984a: 5) I describe the broader phenomena underlying war as "organized, purposeful group action, directed against another group . . . involving the actual or potential application of lethal force." War is not merely action, however. It is a condition of and between societies, with innumerable correlates in virtually every dimension of culture.

Because it is so pervasive, the genesis, processes, and consequences of war can be studied from diverse perspectives, which can lead to radically different kinds of conclusions. Before any analysis even begins, crucial decisions have already been made. What will be the form of the analysis – attribution of causes, demonstration of functional linkages, achievement of subjective understanding? What aspect(s) of war and society will be the focus of the investigation? What level of analysis and what time frame will be used?

Depending on these decisions, different analysts could look at one case of war and conclude that it is a conflict over political status, women, natural resources, or trade goods; an expression of witchcraft

beliefs, cognitive orientations, pent-up frustration, rules of conflict, or belligerent personalities; a quest for prestige, revenge, security, power, trophies, or wealth; a consequence of residence patterns, level of political evolution, men's organizations, sovereignty, or inadequate conflict resolution mechanisms; and that it is generated by individual decisions, the functioning of societal subsystems, or cultural selection. Possibly, all of these conclusions could be correct. Each could accurately identify one aspect of the multiple interactions involved in that particular case of war.

This complexity must be recognized and dealt with. Not having done so up to the present is one reason that anthropological analyses of war tend to the particularistic and eclectic. When theoretical controversies do develop, they tend to be non-comparable, and the points are argued only among specialists in one region. Arguments about Great Plains Indians' warfare, for instance, do not overlap with arguments about the Northeast Woodlands (compare Biolsi 1984; Trigger 1976), and neither is cited in the currently hot debates over war in Highland New Guinea and Amazonia (see Ferguson 1984a: 30–31). Such provincialism is expectable given the limited development of general theory. Several more general hypotheses have appeared over the years, most of which will be mentioned in the text. But these have rarely been connected to each other or to other research findings.

Cumulative growth in understanding war requires that order be imposed on this explanatory chaos. We need theoretical templates to test against the burgeoning descriptive material (see Ferguson 1988a), lest it remain merely raw data. We need syntheses of findings, to show where approaches may agree, and to clarify where they do not.

This paper is an attempt to construct such a synthetic theory or model, one that is capable of coping with the sociocultural complexity involved in war. It does not center on any specific hypothesis, although the theory is capable of generating many testable predictions. The present effort is more deductive than inductive. The criterion of fit with empirical data is secondary to criteria of the explanatory power and parsimony of a few initial premises, and the logical integrity of the hypotheses they generate.

The theory outlined here is generally consistent with the research strategy of cultural materialism (Harris 1979a: part I; Price 1982), even though it differs significantly from some earlier analyses of war associated with that strategy. Inadequacies in earlier theoretical conceptions

led to reformulations which are incorporated here, including a de-emphasis of functional models and the concept of adaptation, a greater emphasis on conscious strategizing, level of political evolution, historical processes, and explicit recognition of the possibility of multiple levels of analysis (see Ferguson 1984a: 28–37). In addition, there is one major point where this theory diverges from the existing cultural materialistic research strategy.

Three mutually reinforcing premises make this a materialist approach. The first is the endorsement of the causal primacy of the infrastructure. Basically, this is the proposition that variables relating to demography, technology, the organization of work, and interaction with the natural environment shape structural patterns of kinship, economics, and politics, and that the latter in turn combine with infrastructural variables to shape ideological or superstructural patterns (Harris 1979a: 56). The causal primacy is expressed both in the existing organization of society, and in its patterned responses to new circumstances.

I disagree with Harris's formulation, however, that structural and superstructural factors should be invoked as explanations of other cultural patterns only after the possibilities of infrastructural explanations have been exhausted. In my view, these are not explanatory variables of only second or last resort. Rather, they expectably will operate in specific ways, determining specific kinds of patterns. This is a programmatic difference, and one which provides the basis of the synthesis to follow.

The perspective employed here is of a nested hierarchy of constraining factors, progressively limiting possibilities. More powerful and general constraints leave latitude for secondary but more specific determinants. Many well-substantiated findings about the incidence and conduct of war have been made without reference to the infrastructure, which are nevertheless perfectly compatible with a materialist approach framed in this way. These findings can be anchored in a network of deductive linkages based on materialist premises, thus expanding the scope of materialist explanation and making the incorporated findings something more than a formless assemblage of mutually irrelevant facts (see Price 1982: 712).

The idea of hierarchy of constraints is not the only materialistic premise in this model. The second is that there may be competition between and selection among groups, and that behaviors affecting

military ability, can be made uniform in a region as groups with less effective military patterns are eliminated. Group selection models have been largely discredited in biology (Williams 1966; 1971). Whatever the general relevance of those criticisms to cultural processes (Harris 1984a: 130–133; Irons 1979: 10–13), they clearly are not relevant in the present case. First, the selection here is for "traits" concerning military capacity, rather than reproduction rates, which is what the biologists argue about. Second, the mechanism producing group extinctions – another thorny issue in biology – is war itself (see Naroll 1966; Otterbein 1977). Warfare can result in the elimination of local groups by death, dispersion, or absorption. If their elimination is due to some cultural pattern related to the practice of war, it is likely that other local groups will take appropriate steps to avoid a similar fate, even if that requires that individual interests and tendencies be overruled (see Alexander and Borgia 1978: 470–471). This view is applied elsewhere to explain the universality of redistributive exchange such as potlatching among Northwest Coast societies (Ferguson 1983; and see Harris 1975: 272; Webster 1977: 347).

The third and final materialist premise concerns motivation. All explanations of war are premised on some assumptions about human psychology, although these are usually not made explicit. I discuss "the question of motivation" elsewhere (1984a: 37–42), where I propose that three basic material goals are the maintenance or improvement of (1) available resources, (2) work situations, and (3) security against threats (cf. Chagnon, this volume). These three are, of course, always accompanied by a host of other concerns. Under some conditions, other non-material goals can outweigh material incentives in decisions to fight. But in the view advocated here, those cases will be exceptional. Non-material goals will not regularly lead to war unless they accompany material objectives. That is because war itself typically involves major costs. This must be emphasized: war costs lives, health, resources, and effort. So, if the motivational premise is correct, we should expect peace if the probable costs of war are not outweighed by potential benefits. This perspective is also applicable to understanding transitions from one phase of war to another. It is compatible with a perspective which stresses the role of purposeful decisions made by thinking cultural beings (see Robarchek, this volume), but contradicts the view that war is in some sense normal, and it is peace which requires explanation (see Gregor, this volume).

The motivational premise can be expressed in one general proposition: wars occur when those who make the decision to fight estimate that it is in their material interests to do so. (This is a more precise and correct formulation than statements made previously [Ferguson 1984a: 32] that wars are conflicts over scarce resources.) The material interests of decision-makers can take the form of six strategic objectives of war: (1) to increase access to fixed resources; (2) to capture movable valuables; (3) to impose an exploitative relationship on another independent group; (4) to conquer and incorporate another group; (5) to use external conflict as a means of enhancing the decision-makers' position within their own society; and (6) to forestall attacks by others. Objective (6) suggests an important clarification. A "material interests" perspective does not imply that war is always deliberately chosen and planned. It may be so, or it may be an unplanned and unwanted last resort, the outcome of a "prisoner's dilemma" brought about as the result of previous self-interested strategic decisions. Even in such a situation, however, decision makers will continue to act in accord with their perceived material interests.

The three complementary materialist premises form a base for a structure of explanation extending through various areas of social life. The model can be summarized as follows.

Infrastructural factors explain why war occurs. In the absence of a pressing scarcity of some essential material resource(s), or when an existing scarcity can be addressed by alternatives less costly than war, the model indicates a low likelihood of war. The infrastructure also accounts for basic parameters of how warfare is actually practised, and that in turn affects all other dimensions of war.

Within these constraints, structural factors explain the social patterning of war, even as they themselves are responsive to war and to requirements of production and reproduction. Kinship affects how people are grouped to fight. Economics translates resource scarcity into hostile relations between groups. Politics is the means through which antagonistic interests become purposeful, violent, group action. Structural factors can make the difference between war and peace in situations where scarcities are generating tensions; and economic and political organization have a limited (at this evolutionary level) ability to create significant additional incentives for war. But generally, structural factors do not generate war in themselves. They do largely determine such matters as why a particular war starts just where and when it does.

Superstructural patterns shape the way individuals perceive and act on conditions related to war. Calculation of material loss and gain necessarily must consider relevant properties of the existing social universe, and that includes the values and rules by which individuals are expected to live. Those which affect war are strongly conditioned by war, but they also respond to everything else in the social system. War-related quirks of the superstructure, or even of its manifestation in one individual, may tip the scales in a situation already at the edge of war. But independent of infrastructural and structural patterns conducive to war, superstructural elements have a very limited effect. (That does not mean that we cannot use ideas to lessen the risk of war in the contemporary world. Changing ideas can have an important effect over the long run, if, and only if, the actual significance of ideas is understood [Ferguson 1988b; 1989a].)

The following sections describe posited relationships within and between these areas, which are consistent with the initial premises, with other relationships, and at least arguably, with known facts. But any thorough comparison against existing data would be an enormous undertaking, and that is not the task here. Citations of relevant cases are more for illustration than evidence.

All relationships posited here must be seen as probabilities. "Probabilistic causality" has always been an explicit part of the cultural materialist strategy (Harris 1971: 594–596; 1985: 528–529), but the idea has been invoked regarding the study (and practice) of war by many scholars (Andreski 1968: 5; Boulding 1963: 4; Von Clausewitz 1968: 108–109).

Complicating the presentation of the model is the fact that all of these areas experience major changes as a result of general sociocultural evolution and of contact with Westerners. The initial discussion of the above areas will factor-out those changes, concentrating on war in relatively egalitarian societies – bands and tribes – and on relationships not dependent on contact. Following that, separate discussions will address the significance of general evolution and contact.

## INFRASTRUCTURAL FACTORS

A usable description of the infrastructure is a population with given characteristics, using a given technology, working to obtain necessities via interaction with its natural environment. Factors related to those

areas have typically been implicated in "ecological" analyses – for a quarter century the dominant theoretical approach to war (Bennett Ross 1971; Harris 1974: 61–80; Hickerson 1965; Netting 1973; Rappaport 1967; Siskind 1973; Suttles 1961; Sweet 1970; Vayda 1969a; 1969b; 1976). Ecologists have most often invoked infrastructural factors to explain cross-cultural variations in war – why society X has the general war pattern that it does – rather than particular variations in the practices of war within one society (cf. Vayda 1979).

Despite extensive changes in ecological theory, the basic idea has remained that war can be a reaction to population pressing on resources, and that it can lead to a relaxation of that pressure. So, war can be "adaptive." (Although Vayda [1976: 3–7] and others reject population pressure as the general cause of war – adopting a broader view of war as a means of coping with any type of environmental hazard – population pressure remains the principal hazard demonstrated in this work.) It is certainly not inevitable that human populations expand until they are stopped by scarcity of some crucial resource. When they do not, one major cause for competition and conflict is eliminated. But populations commonly do grow, leading to resource scarcities, and prompting some remedial action.

This action need not be war. A consistent theme in ecological analyses for the past decade has been the possibility of functional alternatives to war (Balce 1985: 488ff.; Morren 1984: 169–170; Netting 1974a; Price 1984: 220–222; Vayda 1976: 4–5; Webster 1977: 345–348). Intensification of production efforts is one possibility, if infrastructural conditions allow it. Trade is another, but costs of transport may eliminate trade as a solution to basic subsistence problems. Movement is often a real alternative, provided a group is not strongly fixed in one place (below). Movement apart commonly resolves intergroup conflicts before they reach the point of open warfare. This may be especially true in situations where villages or bands fission due to increasing scarcities, and that is one reason why an explanation of conditions leading to local group fissioning is usually insufficient by itself as an explanation of war between fissioned segments (Ferguson 1989b). But when these and other functional alternatives are not viable in themselves, or entail unacceptable costs, or are rendered impossible by the presence of a competitor relying on force, war may be the only option left.

Conflict between competitors for scarce environmental resources has frequently been identified as the underlying generator of war. Vayda's

(1969a) early and influential study of expanding swidden cultivators invoked competition over desirable secondary growth forest land. Materialist participants in the debates over war in Highland New Guinea and interriverine Amazonia have argued for land and game shortages, respectively (see Ferguson 1984a: 30–31; 1989b). I assert competition for prime subsistence areas, notably estuaries, on the Northwest Coast (Ferguson 1984b). The list of such studies is easily expanded (e.g. Balce 1984; Boehm 1983; Graham 1974; Larson 1972). Also, ecological scarcities have been identified as the immediate cause of conflict in analyses which stress that the scarcities are primarily determined by cultural patterns (Biolsi 1984; Kelly 1985). Ecological crises, obviously, can intensify conflict over resources (Bonner 1981: 78; Haas, this volume; Netting 1974b: 152; Tornay 1979).

One point derived from these studies is especially relevant for discussions to come. Conflict situations generated by environmental resource scarcity vary in the specificity of the oppositions they create. Competition may be generalized, so that somebody has got to go, but who exactly does not matter. Or there may be more specific conflicts, so that a group of one type will regularly go after a group of another type. The less specific is the basic conflict, the more room there is for the influence of structural factors described below.

Although ecological theory has been most concerned with how resource scarcity may generate war, infrastructural factors exert a profound influence on war in many other ways. General subsistence orientations will have multiple consequences regarding the causes and practice of warfare. For most hunters and gatherers, and for horticulturalists whose numbers are limited by unevenly distributed game rather than by land availability, defense or conquest of territory expectably will not be a goal in fighting (Dyson-Hudson and Smith 1978; Ferguson 1989b; Winterhalder and Smith 1981). When tribal people rely on domesticated pigs for nutrients, pigs can figure prominently in war patterns: theft of pigs or garden damage caused by pigs is a source of hostility, pig acquisition is an incentive to fight, pig herd size sets constraints on the possibility of waging war, etc. (Meggit 1977; Rappaport 1968).

Pastoralists may be prone to war for several reasons: they typically need to obtain some necessities from agriculturalists; they are often subject to environmental perturbations which force them to capture new livestock or expand pasturage; and their mobility over large areas

makes them candidates for trade controllers or mercenaries (Fukui and Turton 1979; Golden 1986; Peires 1981a).

Both hunters and gatherers and pastoralists have subsistence technology and skills which can be carried over into combat (Cohen 1984: 339; Ekval 1961; Turney-High 1971). The technology of war itself is an infrastructural factor with direct bearing on military planning and action (Engels 1939: 185–192; Mason 1966; McNeil 1982: 9–20; Turney-High 1971 and see Pitt-Rivers 1906) – a fact which should be obvious to all who live in the nuclear age.

Whatever the general subsistence orientation, many factors affect the ability to make war on targets at varying distances, including distance between local groups, topography and ground cover, the technology of movement and communication, the existence of unoccupied territory allowing free passage, and the feasibility of a column literally living off the land (Fadiman 1982: 30–31, 36, 105; Vayda 1960: 12–13, 67–80; Whitehead, this volume). The size of local settlements and their demographic profiles obviously will affect the size and composition of combat groups, and that will affect tactics. (Many of the inadequacies of “primitive” fighters identified by Turney-High can be attributed to their small scale of operations.) The fixity of settlements on the landscape, their circumscription, may determine the choice between fight or flight situations (Carneiro 1961: 61; 1970; Chagnon 1973: 136). The fixity of target groups affects the costs of attacking or conquering them (Gibson, this volume; Goldberg and Findlow 1984). Conversely, highly mobile groups often have the capacity to expand by force over large territories (Cohen 1984: 341; Kelly 1985; Malinowski 1966: 27). The discussion could be extended, but the point should be clear that infrastructural conditions are largely responsible for many aspects of the characteristic practice of war in any culture.

What about the infrastructural consequences of war? If, as argued above, scarcity leads to conflict, does the conflict somehow diminish the experienced scarcity? Here, too, long-standing ecological assertions seem unshaken. By forcing relocations, war can result in reapportionment of resource territories to the size (and so, military strength) of groups; and to weaker groups being forced to leave an area entirely (Ferguson 1984b, 1989b; Meggitt 1972; 1977; Vayda 1969a; and see Robbins 1982). Hostilities can create buffer zones where natural resources may be replenished, free from human exploitation (Bennett Ross 1984: 97–99; Hickerson 1965; Netting 1974b: 155; Trigger 1976:

103, 623). Various direct and indirect demographic consequences of war can slow or even reverse a population growth trend (Cook 1973; Divale and Harris 1976; Ferguson 1989b; Vayda 1968: 470; Werner 1983). On the other hand, war captives may be taken to replenish a dwindling population (Oberg 1973: 191–192; Trigger 1976: 72), or to add to a geographically expanding one (Evans-Pritchard 1940: 221; Wagner 1940: 228).

Does this mean that war is ‘adaptive’? Adaptation is a concept as problematic to employ technically as it is indispensable for general usage (see Ferguson 1989b). It might be better restricted to general use, referring – with deliberate imprecision – to the ability of an individual, local group, or culture to survive and prosper within its natural environment. In that general sense, war may be adaptive. It can lead to a reduction of the pressure of population on resources which led to the fighting. In doing so, war might protect the integrity of the environment by preventing over-use and long-term degradation of the resource base. But, this assessment of adaptive value needs major qualification. War usually entails major costs in resources, effort, and lives, for both winners and losers, and it is not self-evident that these are outweighed by observed or hypothetical benefits of war. Moreover, because war is a blind process, triggered by localized scarcities, it will expectably keep regional populations far lower than the maximum possible. And local scarcities will often be aggravated by war, since efficient use of available resources commonly is hampered by forced population nucleation for defensive purposes (see Haas, this volume). So there should be no mistaking that war somehow creates the optimum balance of people to resources for a region.

Another qualification is that war may be caused by factors other than scarce environmental resources. In these situations, the demographic consequences of war described above may still result, often in intensified form. That may lead to a reduction in population numbers, even to the point of local extinctions. Such war could only be described as maladaptive.

## STRUCTURAL FACTORS

For convenience, these can be discussed under the headings of kinship, economics, and politics. Discussion of each will follow a similar pattern: beginning with comments on its general significance regarding

war, then describing links of warfare variables to specific structural arrangements, and followed by discussion of the patterning of within-group and between-group relations.

### *Kinship*

Relations of descent, affinity and co-residence provide the basic organizing principle of daily life in the societies under consideration. The immediate family and larger circle of kin are context not just for biological and social reproduction, they also are the main bases for organizing any cooperative effort. War parties are organized according to existing kin structures. Reciprocally, the demands and hazards of warfare affect kinship patterns.

A consistent and well-substantiated body of research has demonstrated correspondence between aspects of kinship systems, particularly post-marital residence, and war patterns (Ember and Ember 1971; Divale 1985; Divale et al. 1976; Murphy 1957; Otterbein 1968; 1977; Thoden Van Velzen and Van Wetering 1960). Patrilocal post-marital residence and other correlated patterns produce "fraternal interest groups" of co-resident agnates. Men in these groups share basic interests, and are relatively unencumbered by conflicting loyalties. Such groups regularly resort to violence to protect their interests, and are strongly associated with localized warfare. Matrilocal post-marital residence weakens or eliminates fraternal interest groups, and creates cross-cutting ties between men in different local groups. This encourages the peaceful resolution of conflict among neighbors, and is commonly associated with localized peace. The cross-cutting ties of matrilocality, however, facilitate more extensive cooperation among men, which makes it possible to mobilize larger military forces. That makes longer distance warfare more feasible, and matrilocality frequently is linked to "external warfare." While it has been argued that fraternal interest groups by themselves cause war, these correlations can be interpreted as consistent with the materialist perspective presented here because (1) the pattern of conflicts over resources may play a large role in shaping residence patterns (Ember and Ember 1971), and (2) both conflict and residence patterns are mutually conditioned by basic production arrangements (Ferguson 1988c).

Other major structural features display similar linkages. The development of corporate unilineal descent groups is related to competition

over scarce critical resources (Ember, Ember and Pasternak 1974; Harner 1970). Their presence can add definition to groups involved in war (Bell 1935: 253-259; Berndt 1962: 165-266); and one variety, the segmentary lineage, has been identified as "an organization of predatory expansion" facilitating military cooperation of local agnatic groups (Sahlins 1967; and see Brown 1964; Kelly 1985; cf. Peters 1967). But very intense and deadly warfare can work against unilineal descent as an exclusive basis of group membership, as high battle losses can make flexible recruitment a necessity (Langness 1964: 174; Lepervanche 1968). Other structures which affect the organization of military forces include men's houses (Maybury-Lewis 1974: 306), male age grades (Fadiman 1982; Fukui and Furton 1979), and non-kin sodalities (Lowie 1963: 105).

The nature of interpersonal relations within a group also affects the practice of war. In some situations, domestic authority patterns are carried over to military action (Kiefer 1968: 226). In some, the structure of male-female relations can foster the transformation of resource scarcity into violent conflict between men over women (Ferguson 1989b; Siskind 1973). Choosing sides in a conflict, individual decisions on who is "us" and who is "them" (when that is necessary) is influenced by strength of kin ties (Berndt 1962: 234; Chagnon 1979a; Mair 1977: 34-35). And when conflict does develop among related people, kinship provides an idiom for conceptualizing and acting on diverse and sometimes incommensurable issues (Netting 1974b: 157-161).

Between groups, military relations are partially determined by kin ties related to marriage (Berndt 1962: Ch. 12; Burch and Correll 1971; R. Rosaldo 1980: 65). Close kin ties are no guarantee of peaceful relations, however (Gregor, this volume; Hayano 1974; Kang 1979). Commonly, people both marry and make war on their close neighbors (Bell 1935: 255-256; Peters 1967). Yet the basic link between intermarriage and peace may still hold true even in those circumstances, as individuals try to maintain peaceful relations with their own affines among the enemy (Brown 1964: 335-336; Robbins 1982: 245). Other structural patterns may further complicate these between-group relations (Fadiman 1976: 12; Peters 1967: 272-277).

That related groups are capable of slaughtering each other does not invalidate the idea that kinship generally fosters cooperation. Close kin are usually bound by generalized reciprocity (Sahlins 1972), a sharing of material resources as part of the obligations of kinship. Increasing

scarcity will lead to progressive strain in fulfilling these obligations, and eventual failure to do so, beginning with more distant kin. These failures constitute violations of the norms of proper kin behavior, at a time when their fulfilment may be most needed (as a source of material assistance). The hostility created by these breakdowns may be in direct relation to the previous closeness of the ties (Malinowski 1964: 251). The situation can tend towards polarization of factions (Cosser 1956), to threats and accusations of witchcraft (Marwick 1970), and ultimately to division and war.

### *Economics*

The preceding paragraph calls attention to the overlap of kinship and economics near the egalitarian end of the evolutionary spectrum. They cannot be understood apart. If kinship provides the structure of social relations, economics provides much of the substance. The organization of work, property relations, expectation of rights and duties in production, distribution, and consumption – all are expressed through kinship (Leacock 1982; Lee 1982; Siskind 1978). But as kinship is directly influenced by the necessities of biological and social reproduction, the economy is shaped by the exigencies of material production. And as with kinship, the distinctive structures of the economy influence the practice of war. That influence becomes more prominent with increasing elaboration of the economy, i.e. with evolution, but economic patterns are important variables even in relatively simple societies.

The possibility of intensification of production, as noted above, may offer an alternative to war. This possibility is strongly conditioned by infrastructural factors, but economics operating within infrastructural constraints can take on their own dynamics, which can influence the practicality and consequences of increased production (Price 1984). Some economies are limited by labor, instead of or in addition to land (Lepervanche 1968: 176; Price 1984; Reay 1973). Such economies may generate a demand for captive labor, or slaves. Slave-taking is often a major goal of raiding and of full-scale war (below), although it usually requires at least mid-level ranking as a political pre-requisite. Even among relatively egalitarian societies, however, raiding may be promoted by a structurally generated demand for captured domestic animals (Fadiman 1982: 42–47; Kelly 1985). Another structurally determined factor is the degree to which an individual can enhance his

position within existing economic relations through success in war. That can occur directly, when booty or new territory is acquired by a warrior, or indirectly, when the main direct benefit is prestige, but prestige serves one's material well-being (below). However, continuous development of economic inequality will lead to other and more fundamental changes in war. These, and the results of elaboration of economic structures and processes, will be considered in the section on evolution.

The relation between kinship and economics comes to the fore again when one considers the definition of a group and the structure of intergroup relations. As already noted, "us," bound by dense kin ties, is also a community of interests linked by economic cooperation and/or common property. The kin ties that bind different communities are usually conduits for exchange. The latter merit particular attention.

Levi-Strauss (1944) observes that war and exchange can be understood as opposites, two sides of one relation. It may not be wise to go that far, but war and exchange certainly are related in many contexts (Gibson, this volume; Gregor, this volume; Mauss 1967; Sahlins 1965). Redistribution, at multiple levels, can be a means of building alliances beyond the limits of daily reciprocal sharing (Ferguson 1983; Gregor, this volume; Robbins 1982: Ch. 7). Simple barter may compensate for local ecological imbalances and so remove a basis of war, but such trade may run up against practical limits (Balee 1984: 258; Price 1984: 220; Trigger 1976: 62–63), and it is quite common for a mutual interest in trade to lead to a special relationship of peace between individual trade partners within an environment of war (Harner 1973: 125–132; Numelin 1963: 102; Oliver 1967: 295–296).

As exchange affects war, so war shapes exchange. Demonstrated military superiority, especially if coupled with other advantages in trading position, can lead to unbalanced exchange (Ferguson 1984b: 286–288). Taken a step further, unfavorable trade verges into open tribute, which is a more common concept in anthropology (Krader 1968: 84–85; Pershitz 1979; Rosenfeld 1965: 77–78; Sabloff and Lamberg-Karlovsky 1975). In areas with extensive inter-societal trade, military force is often an inseparable correlate of control of trade routes (Golden 1986; Peires 1981a; Rosenfeld 1965; and below).

*Politics*

At the most elementary level of political organization, politics is firmly embedded in the conditions already discussed. If kinship is the structure of social life, and economics a large part of the content, politics is an expression of the interests they generate. Through the medium of politics, conflicting interests become war, and the links between warfare and politics are extensive.

Political groups and alignments reflect the various divisions of social structure and the interests of their members. What are the significant kinds of political divisions? One possible division is between political leaders and followers. But in relatively egalitarian societies, leaders and followers may be hardly distinguishable. Political leaders are representatives primarily of kinsmen (plus any other followers they can attract). They are closely scrutinized, and given their lack of authority, a leader's actions are, to varying degrees, circumscribed by the wishes of his supporters (Lepervanche 1968: 176-178; Price 1981). Still, even these leaders are in a somewhat distinctive social position and generally have some latitude to influence group action. Also, their status is sometimes dependent on their military accomplishments (Berndt and Lawrence 1973; Chagnon, this volume). This creates the possibility that leaders may manipulate conflict situations to further their own particular interests. By the time one reaches the level of Melanesian big men, such manipulation is already a very significant factor in processes leading to war (Langness 1973; Lepervanche 1968: 177; Oliver 1967: 412-418; Sillitoe 1978; and see Chagnon, this volume; Trigger 1976: 68). More will be said about leaders shortly.

Kinship and economic distinctions based on gender, age, and sometimes generation are accompanied by political inequalities. While mindful that this inequality may be very limited in many egalitarian societies (Leacock 1978; Leacock and Lee 1982), decisions to go to war are typically made by senior males. Women and children have less if any direct say, and it may be that their interests in conflict situations are both distinctive and under- or misrepresented (Langness 1968; Meggitt 1977: 98-99). Internal conflicts related to gender, age, and generational differences may play a role in deliberations leading to war (Ferguson 1988c; Siskind 1973), but this possibility has received so little attention that no generalizations are possible.

Other and more obviously significant divisions are the various

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cleavages which separate similar groupings of kin: clans, lineages, factions, etc. All can have their collective interests and the potential to act on them. These units may be completely independent, or joined in some larger coalition or structure, or merely latent divisions within a single group. Arrangements are often complicated and fluid, with political relations among units at one organizational level affecting relations between levels, and vice versa (Bennett Ross 1984: 102-104; Berndt 1962: 253-254; Langness 1973: 304-213; Maybury-Lewis 1974: 194, 212).

Such common situations put in question the claim that making war is an expectable attribute of sovereignty (Chagnon 1977: 163; Sahlins 1968: 4). Not only is this assertion tautological (sovereignty is diagnosed by the ability to wage war), but the very concept of sovereignty seems inadequate to deal with the manifest complexity and degrees of political independence regarding military policy (Berndt 1962: 309-310; and see Bennett Ross 1980; cf. Carneiro, this volume; Chagnon, this volume; Robbins 1982: 71-83).

The possibility of fighting within a group highlights the weakness of authority relations so characteristic of relatively egalitarian societies. Koch (1974a; 1974b; 1979) gives particular emphasis to the structural inability to decisively resolve conflicts, and claims (1974a: 173-174) that this explains warfare. But this explanation is just a modified version of the sovereignty theme - groups without any overarching authority can resort to force to resolve conflicts - and no more instructive.

Weak authority patterns mean that war, as an activity involving an entire group, requires group consensus. But weak authority also means that individual warriors cannot be prohibited from leading small-scale raids (although raiders can often be restrained by informal pressure [Ekvall 1964: 1123-1124; Trigger 1976: 68]). This can produce a pattern with two distinct levels of intergroup combat, although each will, of course, affect the other (Biolsi 1984: 143; Kiefer 1968: 241; Langness 1973: 306; Meggitt 1977: 74-76; and see Kelly 1985: 51).

However, the non-authoritarian pattern of decisions on whether to enter into war does not necessarily carry over into the actual practice of war. Misunderstanding on this point is the basis of Turney-High's (1971: 26; 1981: Ch. 2) unfortunate distinction of "primitive" and "civilized" war (see Ferguson 1984a: 26-27), since he claims that the sophisticated tactics diagnostic of the latter are dependent on authority relations found only in more hierarchical societies. There does exist a



general correlation of political centralization and military sophistication (see below), but the meaning of the correlation is clouded by the existence of substantial variation between the two.

When war breaks out and survival is the issue, there are often major changes in internal authority patterns. If peacetime leaders remain in charge, their decision power is broadened and strengthened, to relax again when peace is restored (Chagnon 1974: 162; Collins 1950). Often authority is handed over to men of known military skill, who are not peace leaders, and who may even be excluded from the actual decision to fight (Fadiman 1982: 97; Hoebel 1978: 43; see also Meggitt 1977: 68–69; Numelin 1963: 73–74; Trigger 1976: 55–56). Various types of social pressure are brought to bear to get men to fight and follow orders (below). The result is that even where general decisions are made by consensus, there can be a form of command in war, and the use of virtually every tactical principle specified by Turney-High (Lewis 1970: 183–188; Meggitt 1977: 67–68; Stewart 1947: 264–266). And perhaps more interesting, in some cases sophisticated tactics are employed even without field command (Fadiman 1982: Ch. 5; Robbins 1982: 186–189).

Political patterns within a war-making group are only one side of the coin. War is a relation between groups. It is strongly affected by other between-group relations, such as the specificity or generality of conflicts over resources, existing linkages of marriage or trade, and of course, previous military engagements. These relations create social fields which can be complicated, unstable, and obscure. Political leaders, constrained by the requirement of consensus among their own supporters, must steer a course through these treacherous seas. This is a task requiring intelligence and great diplomatic skills. Anthropological theory has little to say about this type of diplomacy (cf. Numelin 1950; 1963). From case descriptions of war, however, it seems clear that the key issue is the negotiation and utilization of politico-military alliances. (The following two paragraphs are based on discussions in: Berndt 1962: Ch. 2, 309–310; Chagnon 1977: 97–99; Fadiman 1982: 31–39; Glasse 1959; Gregor, this volume; Hallpike 1977: 210–211; Hames 1983: 40+; Kiefer 1968; 1972: 73–74; Langness 1973: 308, 312; Lepervanche 1968: 178–181; Meggitt 1977: 68–70; Trigger 1976.)

Possibilities of alliance are created by the existing web of between-group relations, but it is up to political leaders to transform possibilities into actual alliances, and often they have substantial freedom in doing

so. Leaders try to select the most desirable allies from the set of possibilities, take the steps to bring about a general alliance, and negotiate specific understandings for specific conflicts. Their actions crystallize political alignments, and in doing so have a major impact on the process of war. But the task is an endless one, as alliances may hold together for only one action. They, and the home-group consensus, may have to be reestablished at every step in a conflict.

Alliances are crucial for success in war. Allies can provide combat assistance, intelligence, material support, places of refuge, and secure flanks. In plotting campaigns against an enemy, no move may be contemplated without estimating its impact on existing alliances. Alliances also affect the balance of power between opposed groups – itself a factor of great importance in shaping military actions (Berndt 1962: 266–267; Boehm 1984: 166–170; Chagnon, this volume; Heider 1970: 126; Langness 1973: 309–311). The structure of alliance not only affects who wins, but also the initiation, spread, and cessation of hostilities.

Instability of alliances seems the rule at relatively egalitarian levels, although there are exceptions (Bell 1935: 254–255; Heider 1970: 99; Kaberry 1973: 63–65; Langness 1973: 304–305). Certain evolutionary developments above that base line, into ranking, are themselves forms of relatively stable alliances linked to war. One is tribe formation, discussed extensively by Haas (this volume; and see below; cf. Fried 1975). The other is the development of confederacies, which at one time was seen as a distinct level of sociocultural evolution (Jack Bernhardt, personal communication; and see Boehm 1984: 184–185; Drucker 1951: 5; Ferguson 1984b: 280; Trigger 1976).

Recognition that alliances are significant factors in war, and that they are significantly affected by the actions of individual leader-diplomats, adds an element of individual variation to the structure of explanation being offered here. The personalities and skills of leaders do make a difference, which brings us to the next topic: the general significance of attitudes toward war.

## SUPERSTRUCTURAL FACTORS

Probably the most frequent type of explanation of war, especially in ethnographies, has been to relate a war pattern to some aspect of culturally patterned beliefs and attitudes. These efforts take various

forms. Benedict's (1974) approach is to explain war as an expression of a general cognitive pattern. The analytical drawbacks of her approach are well known (see Harris 1968). Unfortunately, similar problems remain in more recent efforts (Burch 1974; Hallpike 1977), rendering the constructed patterns questionable in themselves and useless as explanations of war. More substance is found in several overlapping approaches, which look at war in terms of modal personality types, particular values, and cultural norms of warfare.

People who make war often have belligerent personalities (Berndt 1962; Chagnon 1977; Koch 1974a). But the relationship between aggressive personalities and war is hardly a necessary one. People with normally pacific personalities can be quite brutal in war (Ellis 1951; Heider 1970: 127; Murphy 1957; Robarchek, this volume; Wallace 1972: 39-48). As the discussion of leadership indicated, oftentimes aggressive fighters are kept out of or are secondary in making a decision to fight. (The "hotheads" may be young men, bachelors, who have less to lose and more to gain from combat than older family men [Baxter 1979: 83-84].) Even very aggressive persons can find outlet for their feelings in non-violent actions (Codere 1950). Then there is the question of where these attitudes come from. Several studies in this volume (Chagnon, Gibson, Gregor, Robarchek, Whitehead) discuss orientations to violence. In my reading, all are consistent with the view that attitudes are products of (different) social circumstances. Generally, individual bellicosity would seem to be of secondary and derived significance. However, in specific cases of high politico-military tensions, unusually aggressive individuals, especially leaders, can take actions which precipitate new hostilities (Biocea 1971: 217-238; Li Puma 1985: 64; Trigger 1976: 69).

"Martial values" include a variety of culturally patterned goals. Three are regularly invoked by anthropologists. One is an emphasis on individual bravery, exemplified by the Great Plains coup-counters (Lowie 1963: 117-122; Mishkin 1940: 38-40), but also found in other parts of the world (Meggitt 1977: 68; and see Kiefer 1970: 590). (This contrasts with the far more typical pattern where warriors attack only when victory seems certain, and withdraw when resistance is met.) An emphasis on doing brave deeds certainly can stimulate raiding. But on the Plains, this emphasis seems derivative of the demands of the regional pattern of violence (see Biolsi 1984).

Another goal is to acquire specific war trophies: heads, scalps,

sacrificial captives, etc. Often these trophies have direct material value, as when Jivaro could trade a shrunken head to Westerners for a rifle (Karsten referenced in Bennett Ross 1984: 90). Trophies which are taken and kept may serve as tangible proof of military accomplishment, which in turn has material rewards (Baxter 1979: 82-83; Zegwaard 1959: 1040). Or they may be used to signal a group's ferocity to potential enemies, as when Northwest Coast peoples staked heads on poles in front of their settlements (Ferguson 1984b: 308-309; and see Trigger 1976: 70).

A final value, and probably the most widely cited of all, is a desire to avenge past offenses. Again, this truly is an important motive in some conflicts, especially those with small and closely related decision groups (Bennett Ross 1984; Langness 1973: 308). It does not stand up as a useful explanation of war, however, first because the existence of tremendous variation in the situations calling for revenge itself requires explanation, second because revenge-seeking often cannot possibly operate in the automatic form suggested by ethnographers or every member of the society would be killed (see Peters 1967), and third because revenge requirements are frequently and obviously manipulated by decision-makers, with offenses "forgotten" or "remembered" at convenience (Berndt 1962: Ch. 12; Vayda 1960: 45; and see Balee 1984: 246-247; Ferguson 1984a: 39-40). Analyses of revenge are on firmer ground when the goal is examined not as an autonomous cultural value, but as an element in tactics calculated to ward-off future attacks and serve other interests (Mair 1977: 37-42; Vayda 1960: 118).

War, like any human activity, follows established conventions or rules: on proper behavior towards different types of people, how to start and end a conflict, when and how to move from one level of hostilities to another, etc. Rules of war pose interesting questions, and must be investigated. It may even be that these rules have an inherent tendency toward elaboration into ritual (Kennedy 1971; cf. Kiefer 1970: 591). But rules and normative standards should not be mistaken for practice, as was common in earlier studies of war (Fathauer 1954; Smith 1951; and see Vayda 1960: 3). An important point is made by Zegwaard (1959: 1037) regarding the tangle of rules surrounding Asmat headhunting. Despite the surface appearance of strict and unchanging custom, his fine-grained research revealed that individual decisions were producing changes in practices "all the time".

The suggestion that rules of war have a tendency to be elaborated into

ritual brings up the next topic: the connection between war and magico-religious beliefs and practices. Source citations on this topic are superfluous, since it is hard to find cases where the connection is not evident (but for a compilation, see Turney-High 1971: 213–220). Ritual commonly precedes, accompanies, and follows an engagement. Military success and safe return are divined. The enemy is attacked and confused by supernatural means. Oaths and curses maintain discipline in combat. Supernatural rewards are added to other potential gains for warriors.

Despite the abundance of data on this connection, I could find no general theoretical study devoted to it. Perhaps that neglect stems from a prejudice that war and religion do not belong together – a bias revealed, for instance, when the militarist's claim that "god is on our side" is viewed as ironic. But the linkage of war with religion and magic is quite expectable. War involves, in an extreme form, virtually all of the circumstances which have been invoked to explain the genesis of religion and magic. It is a collective activity, closely linked to group solidarity and survival. It forces individuals to confront a hazardous unknown, beyond their rational-instrumental control. It places a premium on the efficacy of social control. It poses "the question of meaning" repeatedly, as it leads to tragedy, injustice, and immorality. For all these reasons, war is a virtual magico-religious magnet.

All these factors affect how war is practiced and thresholds of violence, but generally, they alone do not cause war (Koch 1979: 200). What they do is reinforce the resolve of warriors (Whitehead, this volume). The decision to fight might be made according to material interest, but those ultimate benefits may seem to pale as men march toward possible death. The rules, values, and attitudes described above give an added and more immediate incentive. They are hammered into boys from an early age, sometimes accompanied by severe punishment for failure to learn them. Individual military accomplishment may be a prerequisite for achieving adulthood; and is reinforced for adults by shame for cowards, and prestige for accomplished warriors (Fadiman 1982: Ch. 3, 4; Heider 1970: 129; Voget 1964). Shame and prestige do not stand alone, however. They often have very tangible correlates, in marriages, in resources, and in influence (Chagnon, this volume; Meggitt 1977: 60–66; Turney-High 1971: Part II; Zegwaard 1959: 1040–1041). All these within-group reinforcements will be backed up by the threat that war will "select out" groups which have not sufficiently

motivated their fighters. (Consideration of all these means of reinforcing the resolve of warriors should eliminate any notion of war being the result of an "aggressive instinct.")

These layers of motivation complicate testing of the proposition that war happens when it is in decision-makers' material interest (see Ferguson 1984a: 37–42). Expectably, individuals will express the cultural values as their motives in war, so emic accounts will often be at variance from the material gain view. Evaluation of the material motivation proposition is still possible, however, by investigating whether it – in contrast to other motivational premises – can explain actual military behavior, viewed on a regional scale (Ferguson 1984b); or by evaluating whether current and prospective material conditions, individually assessed, carry the most weight in group deliberations about war (Ferguson, work in progress; and see Chagnon, this volume). This ends the survey of factors involved with war in relatively egalitarian societies, excluding the effects of Western contact.

## EVOLUTION AND WAR

The concept of general sociocultural evolution has a long history, and also longstanding associated conceptual problems (Fried 1967; Haas 1982; Harris 1968: 634–653; Mann 1986; Service 1971; 1975). Fortunately, most of those can be avoided because the concern here is not with evolution per se, or with the role of warfare in promoting evolution (see Carneiro, Haas, this volume), but with the changes in war which go along with evolution. For this purpose, the concept of evolution can be left at centralization of political control, greater structural inequality, and more intense production efforts resulting in surpluses.

It has long been known, probably since before there were states, that evolution is associated with greater military sophistication in formations, tactics, weaponry, and defensive preparations, although there is also substantial variation in the relation between political and military levels (Broch and Galtung 1966; Otterbein 1985; Wright 1965). And it frequently has been suggested that more evolved polities make war more frequently, more intensively, or more deliberately as policy. Such changes were a major concern in anthropology at an earlier time (Fried 1961; Hobhouse et al. 1965; Malinowski 1964; Newcomb 1960; Sumner 1911; Wright 1965; and see Carneiro, this volume). All these

changes are most apparent when one arrives at the state level of organization, but they are changes of degree and can be studied throughout the evolutionary range.

General developments associated with evolution will affect the significance of infrastructural sources of conflict. The direct constraints of ecology are loosened as other elements of the infrastructure develop, and production moves away from simple lithic technology, limited storage capability, and relatively autonomous household production. Increasing productivity supports, and in turn depends upon, an increasingly elaborate pattern of circulation and controls, many of which are far removed from any direct encounter with an environmental check. The general subsistence requirements of a population become less determinative of demand for resources. They act only as a floor, and even that can be circumvented if the costs of reproducing the work force can be passed to outside the system, as with slave capture (below). The functional necessities of the economic system and the structurally determined pattern of consumption determine actual demand for resources.

The infrastructure continues to set the general boundaries of the economic system, and perturbations of infrastructural factors will cause adjustments in the economy, sometimes traumatic ones. But during normal times, structural patterns and dynamics are more salient, and they will have major implications for war. These implications are apparent in Price's (1984) comparison of ranked societies where production is limited by resources or by labor scarcities. The contrast is accompanied by differences in descent rules, exclusiveness of property claims, emphasis on redistribution, and so on – all of which affect orientations in war (see Gibson, this volume). (That discussion also develops the related point that evolution of political and economic structures increases the ability and incentive to wage wars of conquest [see Carneiro, this volume].) One particularly important manifestation of a demand for labor is the taking of slaves. Although patterns are often complicated and obscured by Western contact, a wealth of recent research indicates that slave capture is a major goal in many indigenous raiding and war patterns of chiefdoms and states (Ferguson 1984b; Gibson, this volume; Kopytoff 1982; Kopytoff and Miers 1977; Lovejoy 1983; Meillassoux 1971; Mitchell 1984; Warner 1982; Watson 1980; and see Engels 1939: 199–202).

An increasingly elaborate division of labor allows for the creation of

military specialists. In states, the organization of production and transportation can be sufficient to support a specialized army. The costs of any particular military effort may be reduced, and so its likelihood increased, if a society is already diverting major resources to the routine maintenance of a military force. Andreski (1968: 232) coins the term "polemity" as "the ratio of energy devoted to warfare to the total energy available to society." The priority diversion of scarce resources is one of the major characteristics of contemporary industrial societies (Dibble 1967; Melman 1974; 1984). It is impossible to say how this compares with polemity in early states or pre-state societies, since virtually no work has been done on it (cf. Robbins 1982: 224–231). The topic merits investigation, especially in regard to the point where the military and their associates acquire enough structural distinctiveness to develop into a powerful interest group. Like any interest group, these compete with other power groupings over the distribution of society's resources (Claessen 1979; Fortes and Evans-Pritchard 1940: 11–14). Since they can hardly justify more support if there is no danger of war, they may have an interest in promoting military confrontations. On the other hand, some state armies must largely support themselves, and perform additional work besides (Beemer 1937: 179–183; Mair 1977: 129). A recent seminar on Zulu history concluded that it was the development of regimented labor which facilitated the rise of militarized states (Peires 1981b: 9–10).

In chiefdoms and states, one's material interest depends more on position within the structure of society than on the general relationship of population to natural resources. Costs and benefits of war likewise depend on structural position. People or organizations at different levels in a society may have even contradictory interests in war (Peires 1981a; Warren 1982; Webster 1977: 363–365). Gains for those who decide military policy may be accompanied by losses for those who follow their commands. Further, since the structure of inequality itself is the key to prosperity for the elite, they will be vitally concerned with strengthening their position within that structure.

The purposeful expansion of resources claimed by the military is one example of struggle over controlling positions, but there are others. Junior upstarts may challenge current rulers (Boone 1983; Epstein 1975: 215; Gluckman 1965; Ogot 1972), the military may pose a danger of overturning established rule (Andreski 1968: 104–107; Otterbein 1980: 354), centrifugal tendencies may weaken power structures (Cohen

1984: 345; Golden 1986; Kiefer 1972: 109), rival strong men may contest control of the central administration (Mair 1977: 62, Numelin 1963: 20; Wolf and Hanson 1972: 205–225), or popular discontent may threaten the entire political structure (Crummey 1986; Ferguson 1984b: 290; Peires 1981c; Wolf 1973). All represent dangers to a ruling elite which often can be neutralized by mobilizing forces against an external enemy. In some cases, the connection is more direct and constant, as the continued rule of an elite is dependent upon the ability to wage successful war more-or-less continuously (although here some non-elite groups clearly do benefit from the violence) (Beemer 1937: 176; Golden 1986; Peires 1981a).

Manipulation of external conflict for the benefit of a few suggests substantial control over military decisions. State political leaders are distinctive less in their ability to make war, than in the control they exercise over warring (Cohen 1984; Otterbein 1985). One side of this control is that subdivisions of a state are prohibited from resorting to force to advance their interests. Even if fighters still mobilize along kin lines, they will do so at the command of the central government (Mair 1977: 129–130). That is the other side of control, that central authorities can demand and compel acceptance of their decision on war (Fortes and Evans-Pritchard 1940: 14; Webb 1975: 157–162; Webster 1977: 364). This is not the case in chiefdoms (Spencer and Jennings 1965: 430–431; Vayda 1960: 15, 28; Wallace 1972: 39–48; cf. Carneiro, this volume), and it represents one of the key aspects in the long-noted shift from kin-based to territorial organization with the advent of the state (Maine 1861). Obviously, this represents a major diminution of the military significance of kinship.

The genesis and ultimate foundation of this control in states is controversial (Andreski 1968; Giddens 1985; Goody 1980; Haas 1982; Mann 1986). The critical point here is that it exists. (Although the claim that the state administration monopolizes the legitimate use of force [Weber 1964: 156; and see Mair 1977: 31–32; Vansina 1971: 143] is often contradicted by the existence of diverse sorts of partially independent local-elite-controlled armed forces [Drago 1970; Gibson, this volume; Kiefer 1970: 587; Willems 1975: Ch. 5; Wolf and Hanson 1972: 223–232].) Non-elite may materially benefit from war in particular cases – in terms of increased security, new resources acquired, external tribute mitigating the effects of internal stratification, etc. But whether they do or not is in itself secondary. The principal question is,

will those who decide military policy benefit? Subjects can be compelled to accept a policy decision, and compelled to fight. The old maxim that a soldier must fear his officers more than the enemy was appreciated by rulers of proto-states in Africa, as epitomized by Shaka of the Zulu, who heaped rewards on brave warriors, but executed those who held back (Turney-High 1971: 83). That, along with changes in the organization of forces, transformed the Zulu from nomadic warriors to a disciplined army of infantrymen, capable of conquering an empire (Gluckman 1940; Otterbein 1980; Peires 1981a; Ritter 1957; and see Beemer 1937: 67–74; Mair 1977: 129–130). With the advent of the state, compulsion replaces consensus as the ultimate basis of mobilization. No change could be more fundamental.

Reliance on brute force alone, however, is an expensive and inefficient form of control. Ideological manipulation is a cheaper way of achieving compliance with decreed military policy. The degree to which this is possible will vary widely, according to the circumstances of a particular crisis and the overall organization of control. As a general rule, it can be assumed that those who seek to enhance their own position via war will take whatever measures are possible to make the war seem for the general good.

Evolution modifies the significance of infrastructural, structural, and superstructural factors in war. It is an error to apply generalizations based on war in relatively egalitarian societies to war in more evolved societies, without considering the implications of these changes. The error is magnified when such generalizations are carelessly extrapolated to current geopolitical crises.

#### WESTERN CONTACT AND WAR

A different kind of distortion occurs when analysts fail to consider the effects of Western contact on indigenous war patterns. Western contact is only a type of the more general process of acculturation involving societies of radically different evolutionary levels (Gibson, Robarček, this volume). In an even broader sense, it is only one type of historical change. But of both more general categories, it is the type most immediately relevant for an accurate anthropological understanding of war. The significance of contact for war has been regularly slighted by anthropologists, perhaps due to a professional bias toward the study of (supposedly) “pristine” culture patterns (cf. Rodman and Cooper 1983).

One illustration of that bias is that study of the most dramatic military consequence of contact – wars of resistance to Western expansion – has been largely consigned to the domain of historians. But even if that division of academic labor is accepted, Western contact must be appreciated for the major changes it produces in “native” warfare.

The three aspects of contact which are most relevant here are the introduction of new epidemic diseases, development of new trade patterns, and actual subjugation of native peoples and their incorporation into Western state control. The first two can precede the third, or even any face-to-face contact, by great distances and long periods of time (McDonald 1979; Trigger 1976). All three affect the infrastructure and have direct and pervasive implications for war.

Disease and other consequences of contact regularly produce drastic reductions in native population numbers that can prompt raiding for captives to make up for losses (Oberg 1973: 191–192; Trigger 1976: 62). Depopulation can reduce pressure on and so conflict over scarce subsistence resources (Ferguson 1984b). However, other changes may counteract that effect. Contact can touch off mass migrations away from the Western frontier, which in turn create a chain reaction of dislocations and migrations. These intrusions can aggravate pressure on resources, especially since the established residents and newcomers will lack any established basis of peaceful cooperation (Balee 1988; Biolsi 1984: 154–155). Other changes may aggravate conflict over access to environmental resources. Geographic range for resource exploitation may be restricted (Biolsi 1984: 147). Disruption of ecological chains may result in unexpected losses of basic food resources (Ferguson 1984b: 296). Commodity production for trade to Westerners can create new resource demands and scarcities (Biolsi 1984: 158–159; Bishop 1970; Ferguson 1984b; Trigger 1976). In short, contact has different and contradictory consequences regarding competition over environmental resources.

Trade with Westerners brings changes in the technological base of society. It is often the case that a lithic technology is supplanted by metal tools, and in the process, a locally produced technology is replaced by one that must be obtained from outsiders. A technological transformation will affect the structural conditions discussed earlier, but will also have direct implications for war. People may raid to plunder steel tools or other manufactures, or to take items, including slaves, which can be traded for manufactures (Ferguson 1984b; work in progress; Golob

1982; Trigger 1976: 626; Vayda 1960: 106; Whitehead, this volume). The new technology may include new and more deadly weapons (cf. Townsend 1983). That can lead to major changes in tactics (Lewis 1970: 183–188; Trigger 1976: 417); and, since possession of these weapons may be crucial for survival (see Naroll 1966: 20), it may trigger an arms race which itself generates more raiding for tradeable plunder and slaves (Bennett Ross 1984: 90–93; Chagnon 1983: 202–203; this volume; Ferguson 1984b: 299–300; Gamst 1986). On the other hand, skillful distribution of manufactures by an outside agent can be used to foster peace among local indigenous groups (Gordon 1983: 206, 209).

Structural patterns related to war are restructured by contact (although such three-way interaction has received relatively little study). Kinship structures often go through major changes due to depopulation, changing work patterns, and direct intervention by Westerners. Residence patterns can change completely. Normative expectations among kin can be undercut by increased value of movable property and general monetarization of social relationships. Marriage rules may be changed by fiat of new authorities, and by the new local realities of power which are considered when arranging marriages (Podolefsky 1984). More elaborate structures of kinship may be eroded by a variety of forces. To the degree that warfare is shaped by kin structures, change in those structures will produce changes in warfare (Ferguson 1988c; Murphy 1956; 1960; Murphy and Murphy 1974).

A major focus of economic interest shifts to relationships with outsiders. If commodity production expands, this will affect relations with the environment, work groups, etc. If this reaches the extreme of full-time wage or forced labor, there may be a virtual collapse of native cultural patterns. Long before that, however, war patterns can go through sweeping reorientations related to changes in trade patterns. The directly negative correlates of contact (epidemics, slave raiders, etc.) may initially rupture established trade networks, which could aggravate hostilities between neighboring groups (Golob 1982: 265–266). A more common occurrence is for natives to seek closer integration into Western trade networks because of the benefits associated with Western technology. Intensive warfare may be generated by efforts to control this trade, as one group seeks to impose itself as a monopolist of one form or another, and others try to break that control and achieve more direct access to Westerners (Ferguson 1984b; work in progress; Hunt 1940; Jablo 1950; Macdonald 1979; and see Ballard 1981; Webb

1975; Whitehead, this volume.)

Political patterns also change in various directions. Group identities and boundaries alter in the process of contact-induced "tribalization" (Fried 1975: cf. Haas, this volume). The position of leaders may be strengthened at first due to their position in newly important trade networks, and because of direct military advantages gained in their relationships with Westerners (who may want "their chief" to be stronger than any rivals) (Ferguson 1984b: 288; Lewis 1970: 178; Whitehead, this volume). A more authoritative leader may promote his own interests via warfare, or he may launch attacks at the bidding of Westerners, to obtain slaves, to pacify hostile natives or because Westerners want to keep natives divided and fighting (Forbes 1960: 121; Murphy 1960: 30-38; Whitehead, this volume). But as acculturation proceeds, the authority of traditional leaders is lessened or completely destroyed. This may happen by stages, as when indigenous states impacted by the West break up into predatory warlordships (Lovejoy 1983: Ch. 4). The actual incorporation of local indigenous populations brings them within the scope of the state's claimed monopoly on force, and local military autonomy is eliminated. Missions and schools in this context illustrate rather clearly the use of ideology to achieve effective control over formerly independent polities (Berndt 1962: 423; Rodman and Cooper 1979).

An expanding Western frontier produces direct and indirect changes in war as extensive as those associated with evolution. The initial net result of these changes is to produce an increase in warfare, and this may occur long before any Western observers arrive on the scene. A consequence of this, I believe, is a systematic exaggeration of images of warlike behavior in supposedly "first contact" accounts. Recognition of these extensive changes should not, however, lead to a different error, that of supposing that endemic war patterns are totally transformed or replaced (see Hunt 1940; Trigger 1976). Post-contact warfare should be investigated for both persisting and new patterns (Bennett Ross 1984; Ferguson 1984b; Gamst 1983; Vayda 1976: Ch. 4).

### CONCLUDING REMARKS

The general theory developed here encompasses most anthropological interests in war. The "either-or" attitude demonstrated in some recent debates must be rejected if explanation is ever to reflect the complexity

of the topic. Recognition of this fact opens the possibility that both sides in an argument sometimes could grant the validity of the opponent's view – if both opponents take care to precisely define the questions they are addressing.

Obviously, there will be objections to the causal priorities suggested here. Objections would be more productive if they were framed in terms of alternative hypotheses, rather than being purely negative, and even better if they were connected to other findings on war, in the manner attempted here. The existence of alternative general theories would establish that there is much common ground between them, and allow for true comparison of their merits where they do differ.