The Scientific Study of International Conflict Processes:
Postcards at the Edge of the Millennia

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Introduction

The purpose of this study is to chart progression and examine the current "state of the art" as regards the scientific study of international conflict processes.[1] The introductory statement is phrased this way in order to frame the underlying tension imperative in the endeavor: art and science are often viewed as mutually exclusive categories, if not oppositional concepts. Art has been defined as the "[h]uman effort to imitate, supplement, alter, or counteract the work of nature. The conscious production or arrangement of sounds, colors, forms, movements, or other elements in a manner that affects the sense of beauty...." Science can be defined as "[t]he observation, identification, description, experimental investigation, and theoretical explanation of natural phenomena."[2] In this sense, art is the value added to the natural endowment through human endeavor; science is knowledge of that <u>natural</u> endowment. The question seems to remain open as to whether there can be conceived a true science of the art, of the "value altered" (i.e., structure) imposed by human agency. Karl Deutsch pinpoints the essential existential link when he describes international relations as "the art and science of the survival of [hu]mankind" (quoted in Palmer 1980, 352). The quality of survival is the defining property, the moral content, of human political relations just as the quality of beauty is to art and utility is to science; utility and beauty link together to determine and define the quality of existence and survival. How we construct meaning from these essential relations, that is, our derived assumptions concerning the meaning of life, underscores our attempts to make sense of the reality we face. Seen from the vantage point of the individual, there are infinite combinations of value linking these three meta-concepts: beauty, utility, and survival: seen from the vantage of the whole, without privileging any part, there can be only one infinitely complex, yet finite, combination that includes everything. Every political tract sports a referent philosophical assumption, a derivation of a particular vantage point; many are so well hidden, obscured, or deeply embedded that they are difficult to identify.[3] Without clear definitions of such existential assumptions, science loses its practical utility and can not coherently inform policy; conclusions drawn from the same information can be as different as night and day. As Hedley Bull has contended, "no strictly scientific theory can come to grips with the central issues of [international

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[2] *The American Heritage Dictionary*, 2nd college ed., s.v. "art" and "science."

[3] "A theory contains at least one theoretical assumption. Such assumptions are not factual. One therefore cannot legitimately ask if they are true, but only if they are useful." (Waltz 1979, 117-8) Useful toward what end remains an important, unanswered question that must be answered before a theory may be considered "rational."

relations]...which concern the value premises of international conduct" (quoted in Puchala 1991, 43). This is a situation unique to the social sciences: "value-free" science remains abstract and useless until value is added by the practitioner or imparted by the theorist.[4]

One commentator (Schrodt 1983) has suggested that an essential tension in human society lies between those who perceive a net personal benefit from the condition of war and those who receive personal benefit from the condition of peace. The evolution of society then is determined by the dynamics of tension between these contending forces as they externalize their particularly subjective, goal-oriented responses to myriad, common situations and stimuli. A science of "making war" in order to elevate the survival of one segment of humanity over another may thus be differentiated from a science of "making peace" which is necessarily constrained in its application such that survival is bolstered and enhanced, indiscriminately, rather than threatened and diminished selectively. This is the nature of the essential tension of international politics; it is the tension that devised the gas chamber and the nuclear bomb. Science is omnipotent but dumb and serves any master; art is the quality of the end-game in a game that has no end. Such a political economy defined by the tension between a beneficent war and a nurturing peace reaches convergence in the experience of "total war," the fire that consumes voraciously, indiscriminately, and completely. That is all that needs to be said about the philosophy of the social sciences; to begin the examination by presenting an enigma. This is the enigma with which political science must contend but one will rarely if ever see it addressed explicitly in the literature. But it is there; it colors the all the answers. Yet it is denied as a question, as though everyone in political science had reached a consensus on meaning and art. The ultimate determination of end-uses is inherently political and must be relegated to politicians, but what guides the politicians if not science?

We can no more positively attest to the existence of a single "true" science of human relations than to the existence of one "true" God; the two prospects are not unrelated. However, we can be comfortable forwarding two fundamental propositions in this regard: one, we have developed a wealth of scientific knowledge about conflict processes that enables us to choose our "art" and our collective destiny and, two, what really charges the philosophical debate in politics at the end of the millennium, and disables our recognition, appreciation, and application of such science, are differences of perspective, motive, objective, and expectation. We have the science to end war but "we" choose not to implement it; "we" are not willing proponents of universal peace, not yet. "We" are holding out, still believing that there is a rational utility in "limited" warfare: a quick, decisive victory over those who are against "us" and the attendant problems that continue to vex "us:" a final solution. That is where "we" began the twentieth century; science alone can not change our minds nor define what is right, it simply defines our options at a point in time, it can only contribute meaningfully to the determination of what will occur as a conditional consequence of competing purposeful actions. (See Jervis 1997 for a full discussion of science and "system effects.") Yet, there is a quality associated with the advancement of science that does contribute meaningfully to the art of survival; pure science seems to enjoy only a spurious relationship to art and survival.

Science does give us a view of the possible answers and thus underscores the importance of scientific inquiry. Levy (1989, 270) has proposed that the "absence of war between democracies comes as close as anything we have to an empirical law in international relations." But this

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[4] See Nelson 1993 for a discussion of values in scientific inquiry.

understanding of the "law" can only be a partial answer, a privileging perspective, until we can phrase the proposition to include a comprehension of the rationale for challenging the law, or standing outside its protection. There is an alternative expression of the "empirical law in international relations" that captures the progression of political relations through history: the utility of war, violence, and coercion lessens with the development of human society. Jervis (1997, 68) paints an image of an alternative explanation for "Levy's law" when he points out that "Malthus was wrong: A rising standard of living decreases rather than increases the birth rate and so is self-sustaining." The implication here seems to be that as the quality of life increases the general impetus to change circumstances or control relations radically through the use of force lessens, whether that impetus is provided by circumstantial imperatives (Choucri and North's "lateral pressures") or aspirational tendencies (i.e., "rational choice"). As advances in science are channeled toward proper applications of and outlets for human potential, the "inevitability" and scourge of the Malthusian proposition is overcome and undone. Seen from the vantage of the whole, the prevalence and pervasiveness of violence in human relations has steadily diminished over the course of human history. Barbarian hordes are mostly a thing of the past, mass slaughter occurs less frequently, slavery and servitude are largely gone (or at least more subtle and less onerous), the wholesale extermination of native populations has abated, forced labor and relocation has diminished, torture is no longer condoned, capital punishment has decreased, domestic abuse and corporal punishment are frowned upon in many regions of the world. Plagues and epidemics are controlled and structural violence, while still a serious problem in large areas of the world, is much less of a problem in other areas. This points to an important trait of the steady progress toward peace: that progression is not evenly distributed across time nor space. It is difficult to believe the proposition of peace when we are faced with a barrage of terrifying images on a daily basis, images generated mainly within the pocketed remnants of violence and transmitted to inflame our indignation of continuing barbarity and atrocity; perception complicates knowledge. As the sheer magnitude of violence in life is lessened, the act of violence gains greater weight, it becomes the unusual rather than the usual. The empirical fact of such progress is largely invisible because, in a vain and noble attempt to elevate human dignity over the horror of violence the vision of reality has been purged from our historical tracts and replaced by heroic and epic myths; ugliness has been swept under the rug in deference to the elevation of art; civility distances itself from the sources of barbarity; and most commentators have been content to have it so. Pure science can not fully uncover this fact because it is left largely obscured and unrecorded; it can't be reliably or accurately measured. Not yet.

Unfortunately, there is also a corollary empirical law: the technical capacity to effect war, violence, and coercion, a capability made possible through the technological development of human society, has steadily increased over the same period of time. Fewer people can wreak greater carnage more quickly. Drawn together, these partial empirical laws inform a basic, holistic or systemic dynamic: over time, the relative size (in numbers) of the population segment defined as containing persons who are willing, under usual conditions, to use violence, force, or coercion (i.e., perceive a net personal gain) in human relations decreases while the absolute power available increases. The net interactive effect appears to be that the perceived threat, or possibility, of the outbreak of violence remains fairly constant over time while the sources of threat change continually. It is no enigma when the "willing" are stimulated by conducive conditions to grab opportunities to use force to their advantage in their relations with others; the enigma lies in the unwillingness of the "unwilling" to fully seize the opportunities to alter conditions favorable to the outbreak of violence.

They permit violence by rationalizing, "It's not violence that is the problem; it's violence that affects me with which I have a problem." Perspective, then, becomes an important attribute and contributing factor: seen as "half empty," the *war dynamic* appears to continually elude human control; seen as "half full," despite some fluctuations and high profile setbacks, human and societal management of the violent impulse, the *peace dynamic*, is continually improving. The underlying assumption of this study is, then, that there can be claimed a science of human relations based on a "law of progressive survival." The crucial question remains as to whether the fruits of this law are characterized as a private good or a public good; the distinction centers on the aspect of "excludability."

The irony of our "common predicament," to use Sherif's (1966) phrase, is tremendous; as the impetus to war lessens, the capability to war increases, and the perceived utility of war remains fairly constant and war remains a recurring problem. The basis of for this irony may be termed the "Milgram paradox": a serious, social scientific impediment to fully overcoming the Malthusian proposition that war, disease, and pestilence will control what human will cannot. The Milgram experiments in the human capacity to inflict violence are well-known: the human capacity to inflict violence on a subject grows with the psychic distance perceived, by the actor, between themselves and the target and/or the direct consequences of theirs action. The paradox derives directly from scientific progress: as scientific knowledge increases, the potential for increasing the quality of life improves and, as the quality of life improves, human individuals are less inclined to engage in direct violence. However, as technology increases, the perceived distance between actor and target also increases and human individuals become more likely to initiate more indirect acts of violence according to more abstract, rational considerations. The moral dilemma is profound and has serious implications for research in conflict processes and warfare in the "post-modern" era. We can witness vivid examples of this dilemma in the holocaust, the nuclear bombings of Hiroshima and Nagasaki, and, most recently, in the conduct (since 1991) of the Iraqi war. The increasing reticence of "civilized" peoples to engage directly in war is at least partially offset by their willingness to condone and launch, from a distance, the instruments of technological ("smart") warfare. The empirical "constancy"of warfare belies profound changes in the psychic impetus to use coercion, force, and violence in human relations. A particularly confounding corollary to the "Milgram paradox" may be termed the "Milgram dilemma": due to the confluence of dynamics resulting from uneven global development and the transfer and diffusion of modern technologies, we are seeing a growing incongruence within the 'third world' between levels of societal development (a violence-dampening dynamic) and technological development (a violence-facilitating dynamic). The expansion of power divorced from the evolution of restraint is an especially frightening, "post-modern" development that keeps the scientific study of international conflict processes a survival imperative and very high among global research priorities in the post-Cold War era. It also begs a fresh perspective, as traditional security policies can be seen to contribute directly to the exacerbation of these special conflict dynamics.

A special purpose of this study is to consider the contributions made toward the advancement of the science of international conflict processes through funding allocated by the National Science Foundation (NSF), an agency of the United States government. This special purpose differentiates the present study from the plethora of similar studies conducted on the many related notions of positivistic inquiry in international relations in general or conflict in particular. A quick review of these studies reveals a choir of discordant voices that echos the diversity of perspective, motive, objective, and expectation that characterizes humankind; there is no single

theme that binds them together and so they are conditioned by the subjectivity of their creators. Simply put, such a broad study is an enormous task that allows for infinite perspectives and conclusions. When faced with a similarly daunting task of somehow making sense out of such **diversity**, and "following a miserable night in which [she] dreamed of dancing correlation coefficients being chased by twisting, turning factor structures," Zinnes (1980a, 333) seized on the analogy of a puzzle to give her an integrative scheme and a perspective from which to draw divergent streams together: can a plausible narrative or "image" be constructed from the pieces provided? Many, many more scientific studies have been conducted since Zinnes spent her "miserable night" and I can attest to having similar nightmares that have stretched across weeks and months. I seize a similar purgative, although I will try to take the analogy one step further by constructing a comparative narrative using multiple "puzzle boxes." Perhaps a better metaphor might be "weaving yarn into a fabric" as the pieces themselves are not interlocking. One "skein of yarn," then, is provided by my own extensive study of international conflict processes. Another "skein" contains the cumulated articles published in the *International Studies Quarterly* from 1976 through 1996; I assume that this journal published by the principal organization of international relations specialists: the International Studies Association, captures an accurate image of what has been considered most important by scholars in that general field of political science: a mainstream narrative. A third "skein" is the complement of relevant projects and researchers funded by the National Science Foundation from 1980 to 1997.

In order to give the reader some sense of the enormity of the task undertaken, we can chart some of its size and development dimensions by reference to two articles that quantify these studies at two points in time. Vasquez, who has spent the large part of a rather long and industrious career working toward scientific accumulation in international conflict studies, reviews "all the correlational-explanatory quantitative research on international politics published in articles prior to 1970" and "assesses 7,678 findings"(1976, 171). He finds "over half the hypotheses (4,289) are concerned with inter-nation conflict (negative interactions and violence)"(192). Despite this great investment in scientific research, he concludes that "[t]he major research effort on conflict has been very unsuccessful" (194). Cusack (1995, 192) puts Vasquez's early measurements into context when he reports that "from the rather sporadic appearance of published papers in the late 60's and early 70's, the number of publications [reporting research in the quantitative study of war] in journals and in book form has grown significantly" with production over the past fifteen years approaching an order of magnitude (x10) over prior activity. We are likely dealing, at present, with an excess of 50,000 scientific "findings" of direct relevance to a full assessment of progress in the study of international conflict processes and more than double that number if we accept the basis of the "democratic peace" proposition, that domestic conflict dynamics affect international politics.

Clearly, lack of attention and effort are not problems here. What most commentators see as the main problem (i.e., those who do not reject positivism outright) is a form of information or sensory overload compounded by enormous difficulties in reconciling the purely subjective elements imbedded in each study; these subjective elements present the signature of the author and signify the diversity of their perspectives, motives, objectives, and expectations. The assumption seems to be that, because **subjectivity** can not be controlled, objectivity is not possible; either because it exceeds our capacity to process information and thus eludes our faculty or because it (objectivity) simply doesn't exist to be discovered. Some researchers, such as the Correlates of War "invisible college," have tried to side-step the subjectivity problem by standardizing their core concepts. Such

standardization by a research clique is often viewed, and condemned, by competitors as adding an ideological dimension that constrains or dogmatizes research. It is claimed that ideological content is designed to privilege a certain perspective and group of adherents over others, thus lessening fragmentation by increasing factionalism.

Is this confusion simply an example of art imitating reality? Or a symptom of an as yet undisciplined or immature field of inquiry? One clue to unraveling this particular puzzle is found in a comment by Scott (1977, 429) in a discussion of the increasing **complexity** of global interdependence and collaboration: "As the amount of interaction increases, so does the number of difficult system problems...the system may therefore be said to be moving into an entropic or disorder crisis." In the Kuhnian sense, we may be approaching the moment where a paradigm shift is needed to accommodate the magnitude of change and discordance. Of course, Scott's original remarks are taken out of context as he was referring to the "real" international system not our system of knowledge about that real world system. The irony of the juxtaposition of "real" and "imagined" worlds is profound, however: at the time Scott was describing his image of a movement toward greater disorder in the world system, the "real" world appears to have been moving toward greater order. Art, in this case, was not imitating reality; it had temporarily lost touch with reality as it adjusted its comprehension of the nature of that system in response to dramatic increases in systemic dynamics or information or knowledge of those dynamics. A truth of the matter is that the scientific study of world politics has created an enormous amount of analytical information that we are not accustomed to processing, thus creating the illusion of disorder as we struggle to incorporate and integrate new information with old information and fit them together with conventional conceptualizations, a process complicated by the necessity of reevaluating and restructuring many of those outmoded conceptualizations. It can be said that one reaction to a condition of overwhelming complexity is the desire for an overarching simplicity; again, that one quick, decisive victory, a final solution. From this perspective, the expectation of finding a parsimonious, causal theory of international conflict is tantamount to the search for the "holy grail," or a "magic bullet," an end-game that allows us to retire while the game perpetuates itself, churning out unlimited quantities of affluence and leisure at the flick of a button. Perhaps we expect too much.

Not all of our present confusion can be attributed to information overload, lack of processing capacity, or the desire be master of the situation. Bremer (1995, 267) points to the confounding influence of 'artifactual puzzles' in our analytical capital. It seems that, in our search for simplification we further complicate science through the manipulation, distortion, and dispersion of error through various mechanisms in our quantification, operationalization, and computational schemes. This **ambiguity** is especially problematic with "soft" data: data that contains a relatively large error term. Research in international relations is heavily dependent on soft data: concepts are large and ill-defined, measurement lacks standardization, information is sketchy or missing, etc. Similar to the "butterfly effect" in chaos theory, slight variations in method, measure, or approach can have profound and unpredictable effects on results, often leading very similar studies to contradictory or inconclusive results.[5] There does not appear to be a simple, technical method for identifying, controlling, or removing such statistical, methodological, and analytical artifacts. As such, all scientific results must be considered suspicious. Again, the faint-at-heart find sufficient

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[5] See Anderson and Silver 1985 for an excellent depiction of this statistical phenomenon.

cause to reject "scientific" method in the social sciences and, again, the faithful make mental notes to be aware of potential difficulties in interpretation. This problem is not unique to quantitative research, in any case. Positivists have criticized traditionalists for the same problem: the pronouncements of "scientific intuition" are often viewed by positivists as predicated upon "fuzzy concepts," the rhetorical equivalent to "soft-data." The symbolization of complex ideas and phenomena is fraught with the same kinds of difficulties as the coding of complex traits and characteristics, both endeavors are a form of translation or re-presentation between different "languages." Again, scientism is furthered by the existence of multiple language constructions: fact should remain constant as error fluctuates; each, by being forced to contend with and account for the other in a free-market of ideas, is both enabled and propelled to tighten up its concepts, its communication, and its research methods.

The difficulties inherent in the process of scientific discovery in the social sciences are enough to give pause to even the more devote adherents to scientific inquiry. Zinnes (1980a, 360), who has spent her career wrestling with complex, dynamic models, lends some encouragement:

> We cannot say that there is overwhelming evidence to suggest that *x* and *y* predict *z*. On the other hand, the situation is not as bleak as...others might lead us to believe. Perhaps the most encouraging conclusion...is that it is possible to construct at least a partial picture: a number of the pieces *do* fit together. We are not working in a vacuum, producing studies that have no relationship to one another. It is intriguing and encouraging to discover that despite some problems, of noncomparability in measurement, methods, and occasionally in results, it is possible to see an accumulation of reinforcing results.

In a more recent collaboration, Vasquez and Henehan (1992, xvii) pose a similarly positive assessment of the effort to date:

> Although we are still far from a general scientific theory of war, we have a body of evidence...about some of the factors that appear to be associated with the onset and spread of war in the modern era. In addition, we have evidence about who wins wars, patterns of recovery, and the impact of war on global and domestic political systems.

To those comforting appraisals, we can contrast Puchala's (1991) uncompromising dismissal of the "20-year detour" and his pity for the "orphans of the scientific revolution." Bueno de Mesquita (1980) proffers a more moderate lament. He begins his discussion of theories of international conflict with this statement:

> Despite the efforts of such intellectual giants as Kant, Spinoza, Rousseau, and others, we know little more about the general sources of international conflict today than was known to Thucydides more than two millennia ago. The failure to identify a generally accepted theory of international conflict has led some to conclude that scientific explanations of such conflicts are not possible. The empirical record does not provide much encouragement for those who reject that conclusion" (1980, 361).

Especially important in his remark is the conflation of "traditionalist" and "positivist" theory, neither genre, in his assessment, appears to have been able to advance our understanding. One might infer from this that an important impediment to furthering our understanding of international conflict processes is something common to both genres. He concludes his treatment with an important observation:

> [P]erhaps the most important source of theoretical confusion in the study of international conflict lies in the much discussed 'levels of analysis' problem. One aspect of the levels of analysis problem that has received too little attention is the personification of social collectivities from interest groups to the international system. Ultimately, only individual human beings, acting alone, in response to others, or in conjunction with others, are capable of making decisions" (1980, 397).

Perhaps the common impediment of traditional and positive modes of inquiry in international relations hinges on the conceptualization of the polity as an object (reification) or being (personification) and as the principle unit of analysis. By shifting the focus of inquiry to the "human being" as the principle unit of analysis, we can avoid preferencing special modes of organization and privileging certain actors over others. We also avoid biasing inquiry toward the acceptance and the study of divisions and distinctions; inquiry becomes more concerned with examining the conditions and the organizational schemes under which and within which human beings fare more or less well. This juxtaposition does inform part of the current philosophical debate in international relations, that is, the "fourth debate" between rationalists and reflectivists, and may provide a common ground for reconciliation by refocusing on the human beings and contextual variability and thus enable further progress toward general theory (see Wæver 1997). It seems certain that a symbiosis between theory and inquiry, traditionalists and positivists, reflectivists and rationalists, realists and idealists, must be forged (or at least acknowledged) to replace what appears to be a rather strong, counter-productive, mutual disdain.

So, there is hinted the last of the ongoing foundational developments I wish to discuss that can be attributed to international conflict processes: **multiplicity**.

> Researchers' values, personal moods of optimism and pessimism, and an overabundance of data and information vitally affect theoretical and empirical work in international relations. A consequence is the difficulty of creating reasonably reliable portraits or maps of the world and of the trends therein. This is the problem of multiple realities....Our storehouse of knowledge...has increased in many ways, but moods and multiple realities continue to frustrate the search for genuinely reliable knowledge (Holsti 1986, 355).

Multiple realities are articulated in multiple theories. Whereas to the "pure" intellectual such "theoretical pluralism" may be viewed as a "gallery full of fine art" to be appreciated simply for the "different intellectual experience" that each delivers (Puchala 1991, 51), to the practitioner such multiplicity is more often equated with incoherence and seen as a recipe for inaction. Some convergence is necessary if theory is to gain and retain practical import; indecision is a luxury reserved for those who are not accountable to constituencies. Some convergence may be gained in the political discourse of pluralism, but if viewpoints are too far divergent, discourse leads to

conflict and contention. If theoretical convergence is going to narrow the gap, it will have to be informed by empirics; induction and deduction (and abduction) must be wedded by a common, physical existence in reality (see Gurr 1972, Most and Starr 1989). Figure 1 presents a schematic of the proposed international conflict research process. Three intersubjective realms of inquiry are noted: 1) endogenous inquiry (inquiry conducted by the researcher); 2) exogenous inquiry (inquiry conducted by other researchers); and 3) existential inquiry (the intuitive/perceptual inquiry of practical application embedded in "actuality:" language, culture, and artifacts and extant in "reality:" the natural context).
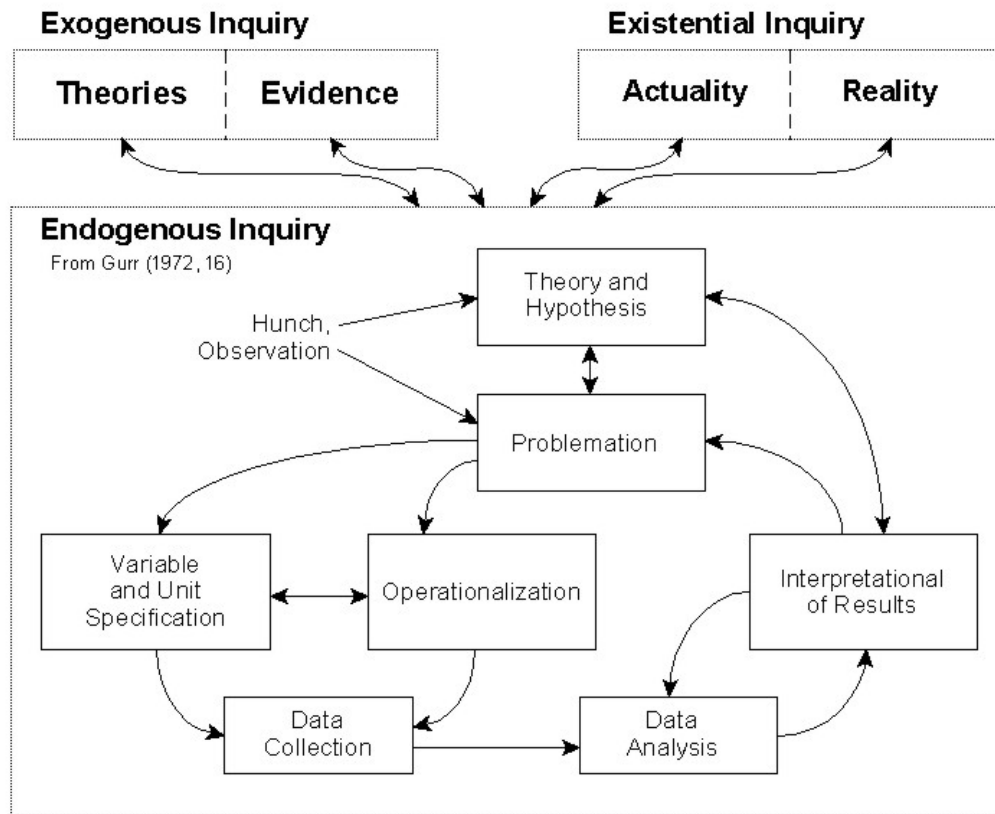

Figure 1: The Scientific Research Process (Adapted from Gurr 1972, 16)

This has been a fairly convoluted discussion and I would apologize for subjecting the reader to it were it not an accurate portrayal of the complexities and moral imperatives of the subject of inquiry and an important aspect of the scientific study of international conflict processes. The intellectual process is one integral part of a holistic reality that can not be avoided without jeopardizing the entire enterprise. The easy solution would have been to simply ignore the complications and assume a perspective (or "strike a pose," if you will): a compromise that would have placed the study in one ideational camp or another. That would be tantamount to admitting that objectivity is not possible and placing the inquiry in immediate contention. But scientism depends upon ideological synthesis; knowledge about international conflict processes can not proceed if our

inquiry subsumes, replicates, or externalizes the essence of the conflict. Under those auspices, history has a tendency to repeat itself rather than teach us how to avoid a repetition of past mistakes. A recapitulation of the arguments presented so far will profile an image of what the "essence of the conflict" is purported to entail: diversity; subjectivity; complexity; ambiguity; multiplicity. From this mix, we wish to derive a basis for **unity** and **objectivity**. That is the "riddle of the sphinx" and it is from that vantage point that we will have to proceed. I have argued elsewhere (Marshall 1999) that the basis of such a unity, one that can subsume diversity, subjectivity, complexity, ambiguity, and multiplicity, necessarily centers on a universally-inclusive survival imperative; objectivity can then be defined as those existential conditions that make such a unity possible.[6]

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One purpose of this study is to assess progress; a determination of progress requires that a referent point be delimited, whether that point be an origination or a destination. It is considered that the one universally inclusive (thereby objective?) destination is perpetuation (peace) and that this can be contrasted to an alternative destination that is termination (war), both of which are concepts amenable to measurement. With this very simple understanding of progress in mind and viewed from the vantage of the whole, it is undeniably true that a great deal of progress is evident and that this progress is, in large part, a consequence of progress in science: humankind has perpetuated, the population has increased substantially, the average life span continues to lengthen, the quality of life continues to improve. It is also quite evident that there has been a large amount of partial failures and inconsistencies, although there is ample evidence that the relative magnitude of failure, or the ratio of failure to success, has diminished continually over time. At the same time, the potential for failure has remained fairly constant. This assessment suggests that the dynamic we are looking at to explain the evident progress is not attributable to the increasing efficiency of a *control mechanism* (systemic "war" potential remains constant) but rather the increasing efficacy of a *management procedure* (the actual experience of "war" has diminished). The significance of this distinction is the inference that the progress observed may be reversed if the management function decays, deteriorates, or fails to perform.

The remainder of this study is presented in sections. The introduction was written with the implicit acceptance that there is a single definition, or understanding, of the term *international conflict processes*. There is, in fact, no common or standardized definition or delineation of the term. The following section, then, takes up a discussion of the meaning of the core concept. The second section provides a general survey of the field over the period 1976-1996 via a discussion of the major research streams evident (or absent) in the articles selected for publication in the preeminent journal of the field of International Relations: *International Studies Quarterly*. The third section identifies some major advances relevant to the scientific study of international conflict processes. The fourth section focuses on an appraisal of the special contributions made by NSF funding.

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[6] This solution to the "riddle" is strongly corroborated by empirical evidence ranging from the United Nations Charter, which codifies an achieved, global-elite consensus on the utility of a universal proscription on the use of force in political relations (except in self-defense), to recent analyses of (American) public attitudes toward the use of force that show greater support when the principal objective was to restrain or resist aggression rather than remake governments or engineer internal change (Jentleson 1992, Oneal, Lian, and Joyner 1996).

The Scientific Study of International Conflict Processes

The preceding section introduces the reader to some of the complications inherent in the study of complex, social phenomena. The discussion was presented as a process of inquiry and concurs with Most and Starr when they point out that "the *study* of international relations phenomena is as much a *process* as the phenomena itself" (1989, 9 italics in the original). It was argued that the process of inquiry can not be dissociated from the process under study, that it is an integral part of that process and reflects similar processual dynamics. The term "scientism" was favored in the above discussion with the intention of distinguishing it as a broader concept of the nature of inquiry than the much maligned "positivism," even though the three terms: scientism, positivism, behavioralism are often used interchangeably. As used here, "scientism" refers to formal, rigorous, and systematic forms of inquiry and intuitive reasoning designed to create and test theories of human social behavior; it is meant to be contrasted to the untethered propagandism, scholasticism, or sophism of the pure "metaphysicist." Scientism is not a separate or distinct method of inquiry; it grounds inquiry to practical concerns so as to create a comfortable "thinking space" that discounts radicalism and irrationalism. Both aesthetics and utility infuse political behavior and so must be considered in political theory and inquiry; either alone are insufficient cause to appreciate or deprecate a theory of political behavior. Too often, an eloquent theory or an appealing program has charmed an otherwise rational audience into generating, inviting, or overlooking unexpected or inadvertent consequences, "hard choices," and terrible disasters. Neither theory nor politics need to be proved before they can be "useful" but they should never be dissociated from their "usefulness"; they must account for the evidence presented and be accountable for both the intended and unintended consequences of their program.

The intent of this second section is to define the subject of study: the scientific study of international conflict processes, so as to determine what must be included in the *universe of inquiry*. The warrant for this study speaks about research found in "scholarly publications such as scientific journals in the field of International Relations focusing on Conflict Processes." At first glance, one would assume that all research accepted for publication in international relations journals is "scholarly." If that were the sole defining criterion the study would be too large and unwieldy as it would encompass the field of international relations itself. Fortunately, there are four key words that may help to define the concept, specify the relevant universe, and focus the study: scientific, international, conflict, and process. Each term will be discussed in turn with the hope of arriving at a reasonable definition.

Scientific Study

Most commentators identify "scientific" research in international relations as beginning in the 1930s with the works of Louis Fry Richardson, Pitirim Sorokin, and Quincy Wright. Scientific method was not immediately incorporated into the mainstream of the field; the so-called behavioral revolution finally "reached the proportions of a tide in the 1950s and 1960s" (Palmer 1980, 354). A very narrow definition of "scientific" emerged at that time which focused almost exclusively on methodology. A sharp distinction was drawn between this new approach and the more traditional

approaches that relied on narrative, historical accounts, and eclectic and anecdotal evidence. A great deal of animosity was aroused by what was seen by many as an attempt by a faction to use the "scientific" label simply to gain prestige and discredit by fiat the established scholars in the field. As pointed out by Vasquez (1976), and mentioned above, there was little cause for elevating or emulating the "scientific" work accomplished during the early phase of the behavioral revolution in international relations. The initial phase yielded few contributions and none of the major breakthroughs anticipated by its more enthusiastic proponents. Yet, it was surely too early to judge the merits of the approach; like many technical innovations, initial investments did not pay immediate dividends. The main problems of scientism's first phase were three: 1) lack of accurate, reliable aggregate data; 2) unfamiliarity with methodological applications; and 3) primitive computational capabilities. In addition, extant theories of behavior were constructed in a very "loose" language that was not easily made compatible with the more formal language of mathematics nor did it readily yield discrete hypotheses nor inform initial data collection efforts.

By the end of the 1970s, however, dividends from scientific research were beginning to be realized and important contributions were being acknowledged. One of the best collections of such research at the time was the *Handbook of Political Conflict*, edited by Ted Robert Gurr (1980). What distinguishes that compendium even now is its scope, both in its definition of the subject of inquiry and its understanding of what constitutes "empirical research."

> [The] handbook surveys a generation of theoretical and empirical research on the origins, processes, and consequences of political conflict....Conflict phenomena are the overt, coercive interactions of contending collectivities....The conflict phenomena under examination in the *Handbook* include political riots, insurrection, revolution, and war among nations. (Gurr 1980, 1-2)

> The distinctive characteristic of research on conflict in twentieth-century social science is the use of systematic methods of observation and comparative, usually quantitative, analysis to develop and test generalizations. In effect, empirical research on conflict couples the historian's craft of description to the theorist's search for valid generalizations. Some...are descriptive...[o]thers are causal....The general method...is always comparative....Such observations are frequently but not always reducible to quantitative measures: numbers facilitate precise analysis, but they are not essential to it. Some elegant theories...have been derived from the systematic but nonquantitative comparison of a handful of cases....And in principle a carefully designed "crucial case study" is sufficient to provide a strong test of a lawlike generalization. (Gurr 1980, 4)

The scope of the Gurr compendium is vast and is followed by a similar, and even more extensive compilation of research by Zimmermann (1983), *Political Violence, Crises, and Revolution: Theory and Evidence*. A parallel effort was being centrally coordinated under the direction of J. David Singer as the Correlates of War (COW) "invisible college." As mentioned above, the COW approach sought to standardize concepts and coordinate inquiry on international conflict by focusing research and analysis on a common information pool: the COW data sets on war, material capabilities, and militarized disputes. Several edited volumes and individual tomes were produced by the "faculty" of the COW "invisible college" during this period (e.g., Singer 1979). The early COW studies were

hampered by inconclusive results and the most enduring product has been the core data sets themselves; these data sets have become the centerpiece of the quantitative "movement" in conflict studies and, thus, continue to define and coordinate analysis to a very large degree. The appearance of these major works in the early to mid-1980s signifies a peak in the scientific study of conflict behavior. These volumes also signify a growing recognition among conflict scholars that the macroscopic approach that appeared so promising in the Gurr (1980) text, had reached unmanageable proportions only a few years later. Efforts to coordinate research break down or scale back at this point and research compartmentalizes into autonomous spheres of "mid-range" theory and inquiry; an important example of this "free-lance" genre is Midlarsky's (1989) edited volume, titled *Handbook of War Studies*. Part of this sense of compartmentalization reflects the enormous expansion in the volume of research and number of scholars in international conflict and security, as distinct territorial claims are staked out in the scholastic equivalent to a "gold rush." The scientific study of international security gains great prestige among political scientists during this period as the crisis atmosphere and immediacy of the Cold War and the spectre of nuclear annihilation loom large and funding and accommodations for war research increase dramatically.

A second phase of scientism, then, may be seen have begun around 1970 and continue through 1990. The second phase is generally characterized by a preoccupation with static models, an events orientation, and the supposition of a linear, causal connection among variables. During this phase, data accumulation improves in both quantity and quality, more-experienced researchers are conducting more-meaningful applications of mostly correlational and regression analyses, and the development of mainframe computers enables greater control, precision, and manipulation of an expanded research agenda. Degrees of coordination have to be sacrificed, however, and an important spinoff of the second phase activity is the development of separate schools of inquiry, each sporting their own, rapidly-evolving technical language and jargon. As a result, it becomes increasingly difficult to communicate and compare results across "compartments." At the same time, the influence of scientism in comparative research is leading its "competitors" toward more formal and clear elucidations of their arguments, a process especially evident in game-theoretic applications of logic in decision making and the development of formal theory.

A third phase development of empirical research is distinguished by the incorporation of dynamics in research models. Although many scholars and researchers have alluded to a "process," "development," or "evolution" of political phenomena, dynamic methodologies and applications are slow to materialize, and for obvious reasons. The addition of dynamic components in quantitative analysis infuses a remarkable degree of complexity that is difficult to comprehend and apply; it demands "hard" data so as to minimize confounding complications and the genesis of more "artifactual puzzles" than meaningful results. It also requires incredible computational capacity. Although the need for dynamic models is seen rather early on and one path for its realization is prepared with the compilation of events data bases such as the Conflict and Peace Data Bank (COPDAB−now expanded as the Global Events Data Survey, GEDS) and the World Events Interaction Survey (WEIS), the full realization of dynamics in international relations research awaits further technical developments. What may be evidence of this new direction in scientism can be viewed by comparing descriptions of scientific procedures at different points in time. The earlier tracts often talk about scientific studies in terms of specifying "causal connections" so that "humanity will eventually be able to control war" (Bremer et al 1975, 375) and liken the inquiry and methodologies to those used in physics. A recent volume edited by Bremer and Cusack (1995, vii)

instructs analysts "to look at war and conflict as a dynamic, evolving, malleable, and complex phenomenon. This organic conception differs significantly from the more mechanistic perspectives that have dominated our thinking and analysis, and it argues that we may have much more to learn from biology than from physics."

Evidence of the acceptance and maturity of scientific study as a special focus in the field of international relations can be seen in the nature of published papers in the main journals of the field and in the recent establishment of separate "sections" in the main professional organizations of political science: the Conflict Processes Section (CPS) of the American Political Science Association (APSA) and the Scientific Study of International Processes Section (SSIPS) of the International Studies Association (ISA). Unfortunately, the self-description of these special organizations, as stated in their charter documents, does not reveal much of a defined purpose or sense of mission. The charter of the CPS states simply that the "[p]urpose of this section is a forum for the study of any and all forms of political conflict both within and between national states." The Charter of the SSIPS (Article 3) states its purposes:

> SSIPS is dedicated to bringing together researchers who, at all levels of analysis and with respect to the entire range of international political questions, pursue these issues using (1) formally stated arguments and/or (2) systematically collected and analyzed empirical data. Following the canons of scientific inquiry, the section seeks to support and promote replicable research in terms of the clarity of a theoretical argument and/or the testing of hypotheses.

Clearly, an examination of the qualifying term "scientific" does not narrow the scope of inquiry much if at all, especially in the present context of a maturing discipline. Scientism is both diffuse and pervasive, yet an explicit understanding of its application or identification of processual dynamics remains more of an aspiration than a reality. Recent criticisms of scientific method, from the "post-modern" or "reflectivist" orientations, look more toward curbing the excesses and exposing the unrealized claims (and embedded values) of scientism rather than denying or dismissing its contributions or its potential.

International

As recently as 1985, there would have been little discussion about the meaning of the qualifying term "international." The study of international relations at that time was populated primarily by scholars from the United States, conditioned by the Cold War, and dominated by the rather narrow perspectives of "state-centric realism." In that rigidified mind-frame, the Westphalian state system was the sole defining quality of research in political relations. In the Westphalian conceptualization, nation (identity) and state (security) are assumed to be coterminous: assimilation of a unitary identity stood as the internal security goal of the state with the proximation to that goal considered an important measure and major determinant of the external security capabilities, condition, and status of the state. The nature of the relationship of the state to a third goal of security policy: prosperity, clearly distinguished capitalist from communist states and advanced economies from 'third world' countries.[7] Sovereignty seemed to stand opposed to identity diversity; such diversity disabled state

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[7] See Chittick, Billingsley, and Travis 1995 for a discussion of this "three-dimensional" model of foreign policy

unity and limited state power. In this sense, the term "international" could support only a single connotation: inter-state, relations between formally-recognized states. This does not imply that international interactions were confined to inter-state relations; economic transactions were allowed to diversify under the liberal order and were increasing rapidly under the rubrics of "multinational" or "transnational" economic relations.[8] Political analyses were simply failing to keep pace with major global changes (so-called cascading interdependence) due to the illusion of closure promoted and enforced by the marriage of Cold War imagery to the Westphalian state system. Crucial dynamics taking place within the state's domestic space and across territorial, identity, and issue domains remained either invisible, blind, or opaque due to the formal veil of sovereignty.

Transparency, a visibility or openness of domestic and informal dynamics, actually begins as an acknowledged global process in the 1970s and can be attributed largely to the opening of informal communication links and channels associated primarily with economic transactions. By the mid-1970s, the United Nations joins with sprouting international non-governmental organizations (i.e., transnational special interests) to utilize the leverage of publicity to pressure moderation in the more repressive policies of sovereign states. Improvements in technology and communications and a progressive relaxation of tensions increase the flow of information and the construction of informal networks. By 1985, the flow of information and other goods across state borders simply can not be stopped and the old-order, closed, sovereign state must acknowledge the obvious: the free flow of information. As a result, diversity is unveiled and identity explodes onto the political agenda (mainly under the rubric of ethnicity). As such, "international," which had been reserved to actions involving sovereign states and conveniently confined to the most powerful few (the superpowers or the major powers), must suddenly account, incorporate, and contend with a plethora of suprastate, state, and substate actors that had previously been understood only as "puppets" of the ideological enemy. Diversity compounds complexity; sensory overload adds to the confusion. With the end of the Cold war, strict "state-centrism" becomes increasingly difficult to justify, especially as transnational corporations grow into an integrated global market network and previously-isolated or immobile domestic problems spill and flow across borders. With the advent of the "democratic peace proposition" in the mid-1990s, it is clear that domestic politics are being integrated in the mainstream research agenda of international relations. The qualifying term "international" presently subsumes all interactions between all social identity organizations and so that term can not help to narrow the scope of inquiry. International relations no longer denotes a separate "level of analysis," it has become simply a higher order of aggregation. Instead of imposing a limit on inquiry, it subsumes all prior limitations.

Conflict

The standard use of the term "conflict" in international relations has usually equated that general concept with the much more specific concepts of "political violence" or "armed conflict." I have argued elsewhere (Marshall 1999) that this equivocation is problematic in analysis and leads

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goals.

[8] Cross-cultural contacts began to be encouraged during the course of superpower "détente" and were later incorporated in the Helsinki Accords.

both the researcher and the practitioner to privilege (or continue to privilege) control strategies over learning and management strategies. Conflict, unlike violence or armed conflict, is not inherently forceful or threatening; it may even be the essential dynamic that drives societal development (see Simmel 1908, Coser 1956). International relations literature appears mostly unconcerned with the definition of the term conflict and so it remains an ambiguous, "fuzzy" concept. War has been the main interest of research; war is a very highly institutionalized and stylized form of armed conflict and, so, relatively easy to identify. The concept of "war" contrasts the concept of "conflict" with an apparent degree of definitional precision. This goes a long way toward explaining why war has preoccupied researchers: not only is war a very dramatic and destructive event that catches and deserves our undivided attention, it is also the most visible and unforgettable event. Under the conditions of constrained and underdeveloped information, the logical starting place for collecting information in a systematic(i.e., scientific) way is to begin with the most readily and consistently observed event: the major power war. Why? Besides the obvious reason (it has become a serious problem), we can comfortably assume that the major powers have kept fairly good records and all major wars have been recorded in the historical literature. And because it has become so institutionalized, the records kept by the major power state on the subject of interstate war are fairly accurate and detailed. Data constraints determine what we can study and how we can study it. Data collection at the holistic level of aggregation is extremely tedious, time-consuming, and expensive. And so, for a variety of practical reasons, conflict and war have become conflated in international relations. States make war and states keep records about states.

Since the mid-1970s, the analytically-expedient, simplified conception of political conflict as "major power war" has given way to a broader conceptualization of conflict, but only slowly. The processual element was largely missing from the original data compilations and the data were fairly "soft." Analysis was necessarily confined to simple associations, usually correlates among attributes of relatively small numbers of cases. With this method, wars could be described and some theories about wars could be tested but little could be discovered about why wars happened. As the simple analysis of major power war became saturated, the parameters were incrementally stretched in several directions. One of the first steps toward a process orientation to the study of war was made by adding the idea of "crisis." A crisis was conceived as an event that preceded the outbreak of war but at a point in time when the escalation to war could still be stopped or avoided. A crisis situation holds a very strong potential for war but not all crises resulted in war. By using the crisis situation as the referent condition (i.e., each crisis defined a single case with war as a possible, but not inevitable, outcome) more could be learned about the process of crisis escalation and war initiation. However, crises signified a very special situation and a very characteristic institutional response; the concept proved difficult to identify, especially in pre-modern-era records or in 'third world' states. Crisis analysis in many ways simply duplicated the limitations of major war analysis; it added as many complications as it clarified. On the other hand, the serious attention given to the crisis event stimulated important studies of the decision making process and contributed to major improvements in decision and interactive-decision (game) theory.

The crucial idea underlying the "crisis situation" seemed to be that a threshold existed whereby normal conditions were transformed to abnormal conditions; abnormal conditions contained a substantially higher degree of threat or probability of war escalation than normal conditions. Unfortunately, the "crisis" concept did not capture nor pinpoint the threshold idea well: some crises were initiated by an armed provocation, some were generated by perceived rather than

actual threats, still others resulted from unexpected or discontinuous jumps in an existing armed conflict. The idea of a crucial threshold that signaled a transformation in the nature of a political relationship led to a reformulation of the simple causal theory of war; the idea that there was an identifiable point prior to the initiation of war where war was still optional rather than inevitable made war a probable and contingent outcome that was affected by either a decision making process or a communication/information process or both. A better measure was needed however, if the idea of a conflict threshold was to be operationalized for systematic quantitative analysis.

A more readily identifiable threshold that distinguishes armed conflict from any other form of conflict interaction is the point of initiation of violence or the introduction of military forces (i.e., violence potential): the point identified as the initiation of a "militarized interstate dispute." This threshold moment can be viewed as the genesis of armed conflict, the seed, if you will. The question then becomes, why do some "seeds" grow, or escalate, into wars while others do not? (An alternative question might be, "why plant the seed if you prefer that it does not grow?") The concept of an "escalatory process" closely parallels an organic growth or development process, that is, a complex process with multiple contact points. The point of this discussion is to illustrate an important evolutionary process in scientism: it must be able to incorporate both the "trivial" and the "obvious." The idea of an escalatory process is not an innovation to conflict analysis; historical narrative has long been steeped in the description of temporal changes. The ability to incorporate simple dynamics into quantitative analysis serves to validate rather than vitiate the approach. An important first step in authentication is replication. Once methods have proved their efficacy by replicating what we already know, they can be used with greater confidence to reveal what we don't already know. Since the early 1970s, data compilations have progressed and more kinds of data are being systematically recorded by a wider panoply of sources. With the improvement of research tools and methods of analysis, the definition of "conflict" takes on greater importance for research.

In its broadest sense, conflict can be said to exist "whenever incompatible activities occur" (Morton Deutsch, quoted in Boardman and Horowitz 1994, 3); it might be said that conflict really begins when the ideas of such activities occur in the minds of humans. Hostility and aggression are emotive qualities that influence ideas and are largely internally driven (although they can be externally stimulated); these emotive qualities have an important influence on whether the conflict will be acted out toward cooperation/coordination or competition/contention (Sherif and Sherif 1953). There are several complicating qualities to conflict, such as communication, information, reputation, iteration, perception, belief, preference, priority, capability, tactics, context, etc., that tend to give the study of conflict a fragmented appearance. A crucial distinction in the definition of conflict can be made on the basis of general outcome: conflict can be constructive or destructive, or it can have a largely neutral effect.[9] Conflict in its broadest sense appears to subsume all interactive behaviors. A working definition of conflict offered by Boardman and Horowitz (1994, 4) does just that:

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[9] The possibility of a neutral outcome (autonomy or optional play) that stands short of outright defection, avoids loss and consequent animosity, and thus enables an easier shift toward later cooperation is a very recent innovation in conflict interaction research, see Dawes and Orbell 1995, Majeski and Fricks 1995. Such neutral goal selection is the strategic foundation for non-violent resistence; combined with interdependence they empower civil disobedience and economic sanctions.

We define *conflict*, then, as an incompatibility of behaviors, cognitions (including goals), and/or affect among individuals or groups that may or may not lead to an aggressive expression of this social incompatibility.

Gurr (1980, 1) offers a narrower definition of conflict phenomena as "the overt, coercive interactions of contending collectivities." This definition appears to include all interactions that could be considered to have an identifiable, destructive or injurious component (i.e., physical force). But if we include only those incidents that already contain an element of coercion, we have no basis for uncovering any information about how to avoid or prevent the use of coercion in conflict situations. Gurr alludes to this difficulty when he adds,

[the definition] is not designed to resolve more fundamental (and irreconcilable) debates about what distinguishes conflict from competition, or whether states of mind, intentions, and situations should be included in the domain of conflict studies (2).

It appears that the use of the qualifying term "conflict" does not necessarily narrow the scope of inquiry. Every goal and every action holds the potential for some form of conflict. The topic of "conflict" in international relations includes all actions and subsequent interactions between all persons organized in all ways at all times for all reasons. Obviously, a systematic study can not be conducted using this universe of inquiry; samples must be taken.

The conventional method of such "sampling" in conflict research is to delimit a set of parameters to define and isolate a subset. This introduces selection bias into the analysis and so limits the generalizability of any findings. I have already introduced this point in the brief discussions of the overawing interest in major power war and of Gurr's definition of conflict phenomena. Gurr demarcates his "sample" with the selection of three parameters: 1) collectivities (i.e., groups); 2) coercion (i.e., the act of controlling change by force); and 3) overt action (i.e., the action must be observed/witnessed). An assumption implicit in this definition is that the sovereign state is only one form of collectivity, a highly institutionalized and stylized form, that acts as a competitor for loyalty, authority, and resources with other social groups in a global or regional social milieu. In this sample, any relationship between coercive and non-coercive conflict will remain invisible as that information is outside the purview of the sample. An obvious difficulty with the sample is that any systematic examination of this subset would be an enormous undertaking and incredibly complex. We do not have the capability at this time to fully analyze a set of information that large and diverse; the set needs to be pared down to manageable proportions. That is what the *Handbook of Political Conflict* does; it takes different, cross-cutting "slices" of the whole, examines the slices, and compares the findings.[10] This "extensive" analysis of conflict behavior has long been considered an unconventional approach in international relations, although in appears to be gaining greater favor since the end of the Cold War.

The standard sampling technique is to prioritize and compartmentalize research on conflict phenomena, thereby enabling an "intensive" analysis of a particular form, or typology, of conflict behavior. The classic samples are "major power war," "interstate war," and "systemic war." As

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[10] An earlier reference to the *Handbook of Political Conflict* (Gurr 1980) can be found on page 11.

mentioned, war is by definition a highly institutionalized and stylized form of violent conflict behavior engaged in exclusively by the sovereign state, a highly institutionalized and stylized form of collectivity. An important connection exists between the "major power war" phenomenon and the "sovereign state" actor: they are definitionally coterminous, a compelling rationale for compartmentalization of a research sample. That sample is also the most researchable subset. The vast majority of all research in international relations has been conducted using variations of this sample set. The most widely-known, well-respected, and frequently-used data base in international relations, the *Correlates of War* (COW--Interstate Wars and National Material Capabilities), codifies this exact set. This is the quintessential data compilation in international relations; analyzed by the most experienced and sophisticated scientists in the field. Major power war defines a very specific and tight typology that has been the top priority of conflict research by scholars situated in the major power states mainly because of the magnitude of threat such phenomena hold for the major power states themselves. The results of such study are case specific, however, due to the problems inherent in the sample bias. What we learn about interstate war is difficult to apply to other forms of conflict behavior in other situations.

There are other types of conflict phenomena that are equally violent and threatening to people in other social and environmental contexts: extrasystemic (imperial) war, civil war, revolution, coup d'etat, insurgency, armed intervention, mercenarism, genocide, politicide, terrorism, repression, organized rape, predation, rioting, communal warfare, the list goes on. These typologies have received far less attention by researchers. This is at least in part a reflection of how we have conceptualized and constructed political structures in the Westphalian system of sovereign states. The rigid division of research has paralleled the principle of sovereignty: domestic politics has been considered to be a separate and qualitatively distinct political process and outside the realm of international relations or international relations research. Minor powers have been understood to have little capability to influence international relations and so have been discounted in deference to parsimony of theory. Research in domestic conflict dynamics has been conducted mainly by scholars in the field of comparative politics. A few researchers have "straddled the border" by looking into proposed linkages, or a "nexus," between civil and international conflict but few have supported combining research and ignoring the artifactual divide imposed by interstate borders (see Stohl 1980 for one summary of such research). Under conditions of a closed system of states where there are relatively few transborder interactions of which the vast majority are officially conducted, jealously guarded, and purposefully controlled by the state, few internal/external linkages should be found (there would be no record of unofficial links, in any case, so any evidence of direct linkage would have been lost). However, in an open system of states wherein the state has lost its monopoly on transborder relations, such linkages should be more prevalent, visible, and influential.

Indeed, beginning around 1980 we can see an increase in the number of researchers who are "talking past" the state structure toward a more fully integrated system and more closely related conflict dynamics, or at least toward a more varied and complex linkage set (e.g., Azar, Jareidini, and McLaurin 1978, Gurr 1980, Zinnes 1983a, Buzan 1991, Vasquez 1993).

> The most glaring error [in empirical conflict theory] has been the failure to link *conflict* theory with *development* theory. Without such a link, it is impossible to understand [identified] trends. The best either conflict or development theory can do is to describe trends in what are assumed to be independent social arenas. (Azar 1983, 83, italics in the original)

There is evidence of some movement toward a broader, more general approach to conflict research that transcends the political divide(s). Support for the "movement" to broaden the scope of conflict inquiry is especially prominent in feminist approaches to international relations theory (see for example Enloe 1989, Tickner 1992, Reardon 1993, Sylvester1994). Limitations in data development remain the major impediments to widening the scope of conflict inquiry, furthering integration of conflict research strands and categorical compartments, and, possibly, synthesizing alternative perspectives on conflict theory at the present time. On the other hand, there is mounting evidence that the internationalization of domestic conflict and warfare is supplanting interstate war as the most pressing problem in international relations (Marshall 1997 1999). On the basis of this discussion, it must be concluded that the qualifying term "conflict" does not narrow the scope of inquiry.

<div align="center">Process</div>

So far, the specification of terminology has not narrowed the scope of inquiry. As mentioned above, attention to "process" has been a relatively recent innovation in research that has not been fully incorporated in analysis. Process refers to dynamics and no one would deny that there is an essential dynamic quality to life and politics. Yet, dynamics infer change and change has not been viewed as a necessary component in political relations. Change is often contrasted to stability and stability is often equated with stasis or status quo, at least it has been so in the international relations literature. One way of illustrating this seeming contradiction, that progress (a dynamic) requires stability or stasis, is to use an analogy to a moving train. To the passengers on the train, it appears as if their "world," the world of the train, is stationary and it is the world outside the train that is the locus of change. Once in motion (i.e, having gained momentum), the train will continue along its trajectory (progress) unimpeded unless some exogenous force (change) intercedes to slow, stop, derail, or damage the train. This rather perverse perspective on motion is the particularist standpoint, it privileges a certain perspective, that of the train. Viewed from the standpoint of the world outside the train, it is the train that is in motion and it is the train's momentum that contains the potential for disruption. The notion of "process" uses the holist standpoint and a temporal sequencing component to assess simultaneous, differential dynamics and the interplay of those dynamics. Because everything is either changing or affected by change at all times, the qualifying term "process" does not limit the scope of inquiry.

<div align="center">International Conflict Process(es)</div>

In an attempt to delimit a conceptual domain and gain focus by reducing the scope of inquiry, we have instead expanded it to include everything. While the foregoing discussion has not managed to narrow the scope of inquiry, it has helped to define the subject matter and illustrate the sheer complexity with which we will have to contend. We are left with the crucial task of establishing focus by arriving at some sort of working definition of the subject of inquiry. The first method only complicated the process of definition; a second method that may assist definition is to examine extant sources for information on how other scholars have approached the topic and compare their perspectives. Yet, even this approach does not readily yield useful information. A

boolean computer search for books and articles containing the key words reveals nothing; "international conflict process" is apparently a unique combination of terms. Searches of related key terms reveal some relevant literature; that literature will be discussed here. In seems that, while use of the phrase "conflict process" is quite common, especially in regard to domestic politics, directed study of the concept itself has not received much attention.

The earliest specific reference to "conflict process" as an operant condition in international relations research was found in the title of a monograph edited by Dina Zinnes (1983a), *Conflict Processes and the Breakdown of International Systems*, and published as a part of the Merriam Seminar Series on Research Frontiers by the Graduate School of International Studies at the University of Denver.[11] That monograph is a collection of papers loosely organized around a central theme: "the problem of system breakdown or collapse" (1983a, 5). The notion of system dynamics is tied to that of conflict process by reference to a common understanding, "[m]any...have identified such system breakdowns as equivalent to war" (1983a, 6). The idea of dysfunctional or disintegrating systemic processes as either being equivalent to war or as providing increased opportunities or incentives to use unlawful force (as legal or established authority weakens or is captured by a "rogue"elite) focuses on an assumed link between system development, or at least its steady operation, and its reversal. In the introduction, Zinnes constructs a brief narrative that attempts to weave the authors' perspectives together; she stops short of constructing an explicit synthesis that might lead to a definition of process dynamics. In the first chapter Cioffi-Revilla discusses the "political reliability" of political systems and the changing probabilities of systemic disorders resulting from deterioration, malfunction, or collapse. An underlying assumption appears to be that the political system is constructed for the purpose of reducing destructive conflict and that its performance (i.e., reliability) can be gauged or measured according to how much or how little disruptive behavior occurs at any point in time: "[p]olitical reliability refers to the probability of desirable events and processes taking place in the political system" (1983, 37). In chapter two, Bueno de Mesquita claims that "[l]eaders of nations resort to violence to achieve their objectives when a breakdown occurs in other means of conflict resolution" (1983, 47). In the third chapter, Midlarsky (1983) talks about the maintenance of an equilibrium condition among contending dynamics in an interactive system. Azar (1983), in chapter four, shifts the focus from the dynamics of functional systems to that of dysfunctional systems. Whereas peace is assumed to be the normal operating condition in a functional system and war a symptom of breakdown, in the dysfunctional system hostility appears to be the normal operating condition with warfare as an accepted method of negotiation in conflict interactions. Under the conditions of "protracted social conflict," the societal system adapts to (or copes with) hostility and periodic violence by creating an odd equilibrium dynamic whereby warfare is kept below a general threshold where it might destroy the system. In this distorted or maladjusted system, the condition of peace is equally threatening to that of war, a situation similar to a "dual-dependency" where a shift toward either extreme threatens to disrupt familiar patterns of communication, interaction, and allocation. Schrodt (1983), in the following chapter, elaborates a dynamic model of protracted conflict characterized by sporadic outbreaks of destructive behavior and self-perpetuating conflict patterns. Zinnes' (1983b) chapter marks the end of the collection of essays; her focus is on the dynamics of hostility and the

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[11] The earliest reference to "process" in international relations may be Kaplan (1957), *Systems and Process in International Politics*.

differential effects that changing levels of hostility will have on the operation of the system. Her thesis is that it is the emotive energy of hostility that disrupts the rational negotiation of conflicts; too much hostility interrupts rationality and shifts the expression of conflict behaviors (i.e., the utility of interaction) from constructive (cooperation/coordination) to destructive (contention/control) strategies.

Most and Starr (1989) speak directly about the need to develop a process orientation in scientific research in their book, *Inquiry, Logic and International Politics*. They give a general definition of (conflict) process as the "interdependent outcome of two or more actors choosing policy options from a menu of opportunities or possibilities that constrain their choice"(1989, 4). "A war [then] is [simply] a particular type of outcome of the *interaction* of at least dyadic sets of specified varieties of actors in which at least one actor is willing and able to use some specified amount of military force for some specified period of time against some other, resisting actor and in which some specified minimal number of fatalities (greater than zero) occur" (1989, 73). Processes are agency operating within an environment of structural (physical) parameters, learned procedures, and interactive constraints. Contrary to the expectations of causal models, the understanding of process presented by these authors is decidedly nondeterministic; substitutability of response to stimuli limits the technical or mechanical quality of interaction sequences and makes prediction of specific outcomes problematic. Instead, we must focus on the goals of actors, the strength of their desire to achieve those goals, the means they are willing to employ and lengths to which they are willing to go to achieve their aims, and, especially, the incentive structures that have been constructed that condition the values and benefits associated with those goals in comparison to alternative (substitutable) outcomes and procedures. In this understanding of process, there are multiple access points and multiple paths, governed by "domain specific" or "nice" laws, where coordinated influences can be effective in channeling choices toward socially optimal outcomes and procedures and in reducing the probabilities of anomie and suboptimal outcomes. Peace is maintained when actors can achieve satisfactory results without exercising their option to resort to force. A special problem with the occurrence of war is the effect it may have on the complex incentive structure (e.g., should an actor derive net benefit from waging war) or on the ability to maintain stable and equitable allocative structures (i.e., uneven distributions and systemic breakdowns). A diffusion process can take place whereby qualitative shifts in value incentives and interaction outcomes spread through system structures, whether these shifts are negative (e.g., the diffusion of war−see Siverson and Starr 1991) or positive (e.g., the diffusion of democracy−see Starr 1991).

Hoole and Huang (1989) devise a model of shifting tensions in a holistic "global conflict process that involves numerous nation-state and nonstate actors and considerable interconnectedness between international and domestic conflict behavior....A process is defined as 'a continuing development involving many changes'...[and] conflict is defined as 'a fight or war'"(1989, 143). In their unitary conceptualization that focuses specifically on the war dynamic, "[t]he global conflict process appears to involve a whirling motion with diffusion characteristics and complex mechanisms that tend to draw in participants" (1989, 146). By the notion "whirling motion" the authors refer to "an inverse relationship between the two categories of conflict [interstate and intrastate]. Hence, an increase in international war activities seems to have a dampening effect on civil war activities. And likewise, a decrease in international war activities seems to be followed by an increase in civil war activities" (1989, 152). They claim that the evidence of a "global conflict process and the development of a framework for analysis that embeds conflict explanations in a multiple equation

system with feedback mechanisms and a dynamic time series approach with higher order lag specifications provides us with a new research orientation...[and] a new research agenda" (1989, 159). A schematic diagram of the proposed "global conflict process" is presented in Figure 2.
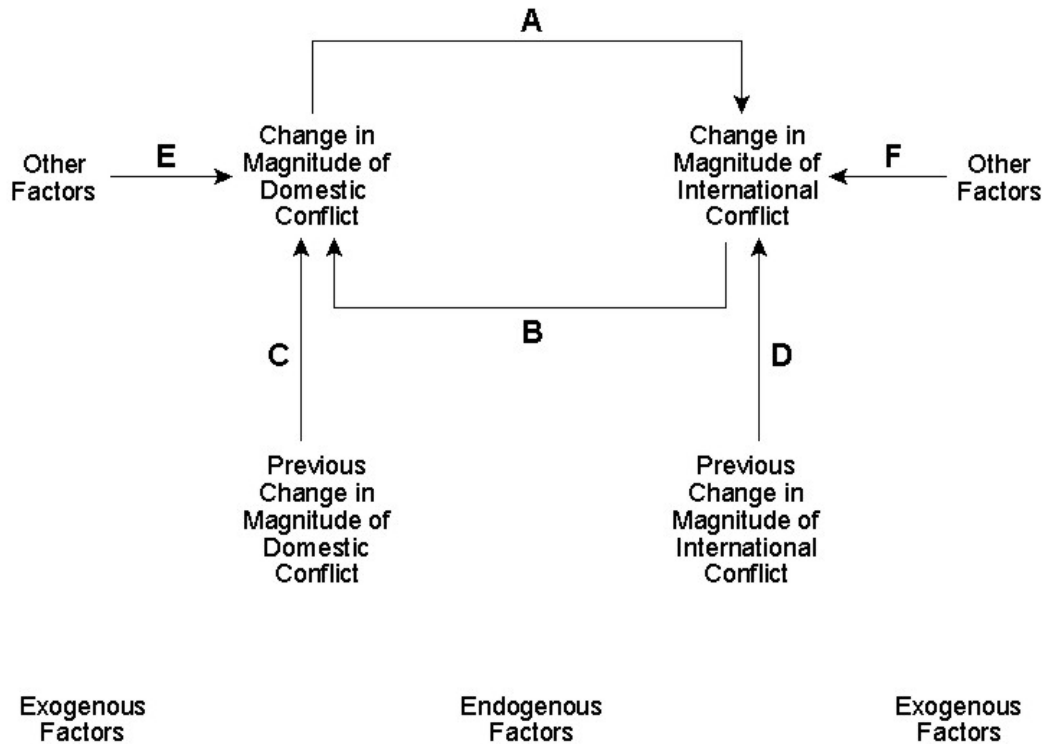

Figure 2: The "Global Conflict Process" Model (From Hoole and Huang 1989, 155)

By means of the diagrammatic presentation of the posited vortex image, Hoole and Huang attempt to organize extant research "streams" in a single macro-theoretical application steeped in a swirl of diffusion and contagion dynamics (both temporal and spatial). In the words of the authors, the "process is even more complex than that portrayed [in the diagram]" including supposed multiple order lag effects interconnecting events in complex webs with changes in opportunities (and willingness to escalate conflict interactions) over time attributable to the full complement of technological developments (1989, 155). The main intent of the model, then, is not a specification of process dynamics but a categorical scheme for situating research; "links" A through F (refer to Figure 2) situate the categories defined by their relationship to the structured dynamism. The central vortex is basically a "culture-of-violence" proposition as these instrumental interactions tend to perpetuate a consistent tenor and tempo of expectations. There is little research situated in the categories A-D, however, as armed conflict events and violence episodes are usually assumed to be independent phenomena in conventional research. The vast bulk of research is situated either in category E, conditional factors/attributes associated with the "causes of domestic conflict," or

category F, the "causes of international conflict." When the volumes of research are added to the schematic, the impression that it gives is not of a raging global vortex fed by dyadic interactions but rather of the "state" squeezed between a rock (interstate war) and a hard place (intrastate war), squirming frantically and searching for something that might relieve some of the pressure. Of course, it is this second vision that informs the conventional "statist" approach in international relations research and, when applied to conventional notions of economic development, has led to the prescriptive policy known as the "national security state" and a "siege mentality." Both images focus on the state in its "gatekeeper" capacity: regulating politics dynamics in both interstate and intrastate spheres of action. The conventional view of the state as a "swinging door" (fighting to gain a security foothold in one realm so as to turn its energy on gaining security in the other realm) contrasts to Hoole and Huang's systemic view of the "state"as a revolving door struggling to regulate a swirl of dynamics largely beyond its control. Either of these images presents a plausible interpretation of the evidence, as that evidence is presented by the research literature, and either may be thought of as definitive or artifactual according to the disposition of the analyst. This inconclusiveness leads to the question: Are these competing or complementary visions? Very similar to the train analogy offered above, it may be that these visions are simply differentially situated: one, from the inside looking out and, the other, from the outside looking in. A third dynamic that is overlooked by both approaches is the compounding/confounding influences of cross-border interventions: intrastate warfare is rarely left untouched by interested, external actors whether supplying strategic or humanitarian resources; interstate warfare necessarily affects and is affected by domestic relations, resource flows (including external sources of supply), and infrastructure.

Zinnes and Muncaster (1984) work out similar but much more varied vortex models based on emotively-driven "activity" within regional complexes or "hostility systems." These models are formal mathematical representations based upon Azar's work on 'third world' conflict dynamics and, especially, the concept of "protracted social conflict" (e.g., Azar et al 1978, Azar 1983). It is the idea of an interplay between rationality-based and emotively-based interactive systems that is particularly intriguing here. The mathematical models generated by their hostility assumptions closely approximate the patterns of warfare and insecurity evidenced in the several protracted conflict regions identified during the Cold War period, 1946-1990 (Marshall 1997a 1997b 1999). In a study of patterns of warfare plaguing the world in the contemporary period, Marshall (1999) zeroes in on environmental context as a definitive condition that tempers the probability of violence in social relations; the most basic distinction is between crisis and non-crisis modes of decision making.

> As conflict is an inevitable condition of political relations, the main problem in political conflict theory is to understand why political relations transform from non-violent to violent. It is theorized that the existence of violence, and, especially, systematic violence (i.e., protracted social conflict), creates or reinforces a social psychology of insecurity which tends to diffuse through the network of social ties and alter the perceptions and policy priorities of the political actors most closely affected by the threat of violence (i.e., all actors in affective proximity; herein, the protracted conflict region). The growing sense of insecurity leads to increasing exclusivity, enmity, and violence in political relations among all groups in proximity to the source of political violence (120).

The primary agent of societal disintegration is *insecurity*. Insecurity refers to the psychic condition brought on by a perceived (actual or potential) vital threat to one's physical integrity or well-being. A corollary to the condition of insecurity is a distrust of certain associations (i.e., with "them") and an unwillingness to pursue or maintain exogenous ties and linkages. This condition of insecurity is stimulated by the incidence of violence within reasoned proximity, that is, temporal, spatial, or systemic proximity. The condition of insecurity increases the individual's disposition to justify the use of coercion and violence in political interactions and broadens the acceptable range of discretionary applications of coercion and violence. A condition of crisis is an acute sense of insecurity brought about by unexpected events that appear to pose a imminent threat to vital interests or integrity. In terms of conflict management, the condition of insecurity increases the propensity for political violence, while the condition of crisis increases the probability of political violence. The hypothetical mechanism, then, of societal disintegration is the *diffusion of insecurity* through established networks of social relations in *protracted conflict regions* (1999, 124-125, emphasis in the original).

The influence of emotive perception and response on human motivation is underdeveloped in the international relations literature where rational-choice explanations are paramount and emotional responses are assumed to be precluded and/or eclipsed by elite rationality and structural constraints that promote rational action.

Bremer and Cusack (1995) provide a process-oriented treatment of the more conventional international relations literature in their compendium, titled *The Process of War: Advancing the Scientific Study of War*. In chapter one, Bremer lays out very specific mechanical-technical parameters in designing a schematic model of a linear, step, escalation-to-war process as the organizational scheme for the anthology (see Figure 3). Bremer's conceptualization of the "conflict generation process...is complex, including many effects (e.g., nonlinearities, interactions, interdependence, discrete state changes, etc.) that our [statistical] tools are not designed to detect" (1995, 8). "[P]rocess theories [in general] are stochastic, discrete, inherently dynamic theories of becoming" (1995, 9). He goes on to explain that "the genesis and evolution of militarized interstate conflict can be better represented by a process model because the transition from peace to war and back to peace is a multistage procedure in which the sequence of events and choices play a crucial role" (1995, 9). With this understanding in mind, he delineates a series of conflict "phases" (peace is assumed to be the "natural state") demarcated by the recognized potential for the crossing of three thresholds: peace to militarization, militarization to warfare, warfare to peace. Process dynamics are defined by "sets of transition rules [or rule sets] that state under what logical conditions an interstate conflict will move from one phase to the next [or not]" (1995, 11). Bremer claims that these rules are not likely to be deterministic but, rather, probabilistic in nature but that "systematic identification" of these "rules" is an "underdeveloped research area" (1995, 12). In other words, we are aware of distinctive patterns of behavior that characterize each phase or step in the escalation process but we are not aware of what determines whether a qualitative shift between stages will occur or when. The discovery and delineation of the "rule sets" is the objective of research. Someone interested in international law and familiar with the concept of "customary practice" might wonder if such legal "rule sets" could be definitive here with the voluntary compliance/non-enforceability

component accounting for the much of the probability factor (such voluntarism could be influenced by unpredictable mixtures of hostility, insecurity, rationality, and opportunity).

Even though the Bremer scheme was devised to impart a dynamic process element to extant research in order to vitalize that otherwise static literature, it is the static aspects that characterize the model. The only dynamic is supplied by the sequencing but the sequence itself is not driven by any specifiable dynamic. Apparently, what drives this model are either "chance" (a randomness or coincidence; both elements of chance are seen as inadvertent combinations of factors that attain "critical state" leading to a "chain reaction" transformation of dynamism) or some orchestrated action such as strategic escalation (actors choose to escalate in the pursuit of advantage in determining the future terms of the relationship) or "military necessity." The image portrayed in the model is of discrete conditions that are each characterized by internal dynamism; at some point, the internal "phase" dynamism reaches a critical amplitude that results in a qualitative transformation of dynamic energy to a higher order or state, something like a liquid transforming to a gas. In any case, due to a complex combination of self-amplifying and self-dampening effects in an interactive chain, discontinuous jumps in dynamism are thought to occur.
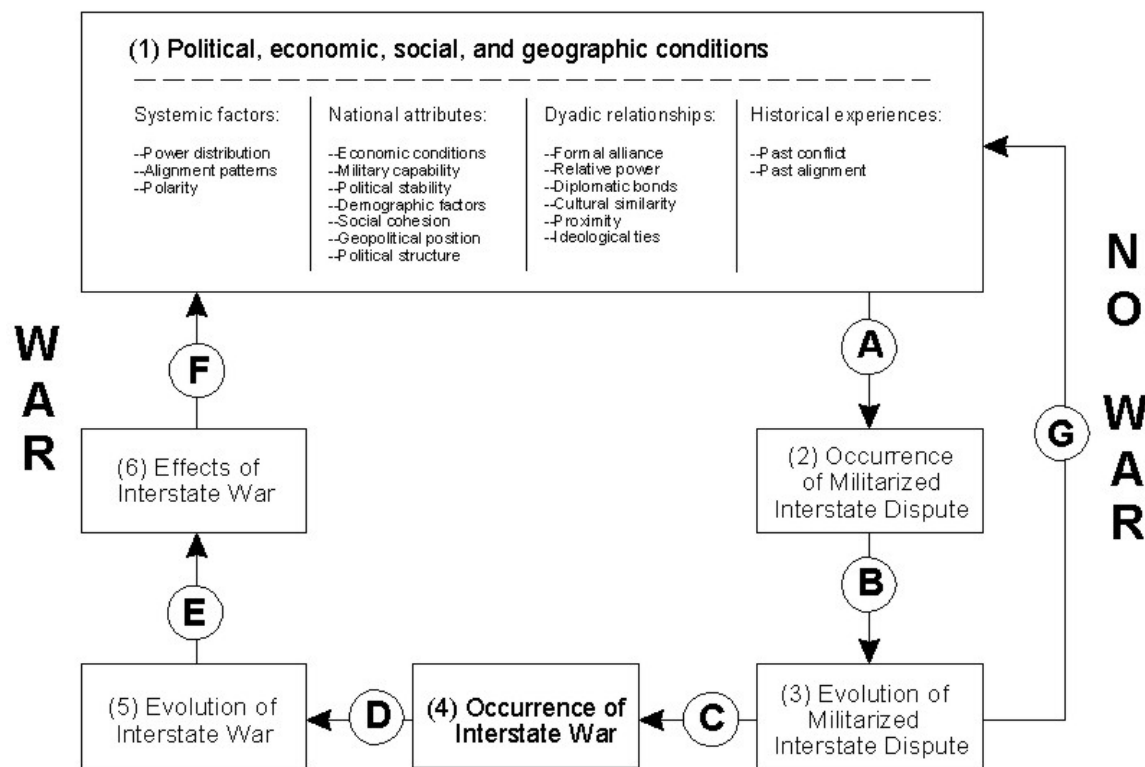

Figure 3: Process in the Scientific Study of War (From Bremer 1995, 13)

There is a certain irony in the specification of "rule sets"–quantitative research rarely examines or even includes the impact of "rules of the game"on interaction outcomes. Presumably,

this is so because values and other normative standards are non-quantifiable. Yet system reliability is predicated on the formulation, articulation, and characterization of normative "rule sets" and "regimes." In this sense, the transformative shifts from one phase to another in the Bremer model are concomitant with qualitative shifts in operant rule sets or rule-system breakdowns (as characterized in Cioffi-Revilla 1983, above). It is difficult to imagine how the transformative shifts can be driven by rule sets unless there are competing and mediating rule sets: one rule set for disallowing shifts and one rule set for allowing shifts and an intervening rule set that governs which rule set is operative under any given set of conditions. Or perhaps, there are no rules at all, so shifts occur arbitrarily or opportunistically. There appears to be a differential quality in the application of rule sets to each of the phases in the Bremer model, with each step in the process characterized by an increasing resistence to normative rule sets and increasingly governed by physical/instrumental rule sets. If nothing else, the individualized "rules of military engagement and disengagement" should be discernible in the quantitative analysis of escalatory shifts; and they are evident. For example, Maoz (1995; chapter two) finds domestic factors (structures and political processes) show "considerable promise" in explaining the shift to militarization. In pondering the shift from militarization to warfare, Siverson and Miller (1995; chapter four) focus on capability factors and interaction dynamics; this coincides with the rationalist observation that the strong are much more likely to initiate a shift toward militarization and war (when the weak refuse to subordinate their interests in the dispute and thus "provoke" a credibility crisis) and back toward a non-war condition (when resistence is broken and objectives are attained--Bueno de Mesquita 1981). Yet, the evidence also indicates that the strong are not necessarily "driven" to press their advantages over the weak by force or threat of force; there is equal evidence of restraint.

An area of research that attempts to account for the effects of normative rule sets on conflict behavior and processes has been the area of "peace studies." Whereas war studies focuses on a linear escalatory dynamic, strategic orientation, and a single measure of interaction outcome (degrees of victory or defeat), peace studies subsumes a holistic, systemic perspective. Whereas war studies use simplification in order to achieve clarification, peace studies pursues clarification in the hope that this will aid simplification. Data capabilities, more than anything else, distinguish these two approaches: they are attacking the same problem from different ends of the complexity spectrum. In terms of methodology, complexity is at a decided disadvantage in application and quantification, especially under the conditions of primitive data. In terms of process specification, war studies enjoys a great advantage in that, under the rules of warfare, physical laws take precedence over normative considerations. The mechanics of war are probably as close to fully specified as is possible given the fact that technologies continue to change and those technologies affect the mechanics of war. The consequences of war, however, remain underspecified and so war remains over-valued as an alternative.[12] The task of specifying "rule sets" can be viewed as a point of convergence between war studies and peace studies and no where is such convergence more apparent than in the attention recently lavished on the "democratic peace" proposition.

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[12] See Cranna 1994 and Thompson 1995 for examples of recent attempts to close this gap. In general, if the full social costs of a commodity, including externalities, are not assessed; the commodity will tend to be preferred, and consumed, despite the availability of less costly and more efficacious alternatives.

In a special edition of *The Annals of The American Academy of Political and Social Science* (1989), Lopez describes the areas of inquiry that constitute the special purview of the peace studies approach:

Table 1
Subfields of Peace Studies
(From Lopez 1989, 11)

Level of Human Interactions	Areas of Substantive Focus		
	Causes and consequences of violent conflict	Mechanics of managing, reducing, or resolving violent conflict	Development of values, norms, and institutions for building peace
Individual	individual social and political violence	communication skills negotiation and mediation	personal nonviolence; ethical and religious approaches to individual action
Social group (intranational)	riots and revolutions ethnic, factional, or violent conflicts	social-conflict analysis arbitration, negotiation, and mediation	nonviolent direct action religious, ethnic, or social-group approaches to peace
National and international	war terrorism low-intensity violence arms races and arms trade	diplomacy; international negotiation, arbitration, and mediation international law, international organizations, and multilateral peacekeeping forces	international law, international organizations, and multilateral peacekeeping forces; world-order modeling [nonoffensive] national defense

As a field incorporating the concepts, methods, and findings from a number of distinct disciplines, peace studies involves three major areas of substantive focus: (1) the analysis of the causes and consequences of violent conflict; (2) the study of theories and techniques of managing, reducing, and resolving conflict; and (3) the examination of those norms, values, rules, and institutions that are necessary for constructing peace (10).

The focus of peace studies is change and, specifically, how to manage that change such that the resort to force in human relations is kept below progressively lower standards of tolerance. Table 1 details the scope of inquiry considered relevant to peace studies and situates war studies as a referent point; clearly, everything political is assumed to fall within this scope. As claimed in the introduction above, the general evidence of human progress appears to be consistent with the claims of peace studies advocates.

The idea of "thresholds" or "transformation points" is a common theme in the process-oriented literature and appears to be a key in gaining command over a social conflict process that can only be described as extremely complex and beyond succinct specification. There must be readily identifiable shifts in conditions, properties, values, or behaviors over the course of a relationship if the dream of discovering a "unified" theory of conflict behavior is to be realized. These shifts must be found to be contingent on something that can be altered to produce different results and these shifts must be regularized to a point where control and/or management techniques, mechanisms, and procedures can be routinized to a sufficient degree so that system resources expended in guaranteeing the security function can be kept to a minimum.[13]

Bremer (1995) and Zinnes and Muncaster (1984) postulate three essential thresholds in their process models. In Bremer's rationality model the three points are identified as 1) the point of escalation to militarization, 2) the point of escalation to war, and 3) the point of de-escalation back to the normal state (peace). Zinnes and Muncaster present a model of a "hostility system," an irrationality model; their model specifies two threshold points: 1) the point where general interactive hostility "passes the threshold [where] the fear [of war] begins to diminish and the aggressive, militaristic forces of the system take over" (1984, 192) and 2) the point designated as "war" where the escalation of hostility "becomes infinite" (1984, 195). Another way of describing these two thresholds would be that at point (1) the constraints on the increase of hostility are lost but restraints remain in place (the actors involved no longer fear each other or the perceived consequences of threats but still prefer alternatives short of war) and at point (2) all remaining restraints are removed (no alternatives to war are acceptable; success in war is facilitated by unlimited, utilitarian "hostile activity"). Zinnes and Muncaster do propose the possibility of a third transformative condition: if "there is negative grievance[, that is,] friendship" among the participants "then it is possible for the system to move toward peace" (1984, 228). Karmeshu, Jain, and Mahajan (1990) in constructing a "dynamic model of domestic political conflict process" postulate multiple "threshold points" in the magnitude of discontent felt by either of the antagonists in an interactive (conflict) process. These thresholds connote points where increasing levels of discontent overwhelm extant control

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[13] In the most basic terms of political economy: whatever resources are expended in the security function are not available to the prosperity function (security functions may serve as a distributive or motivational apparatus that may stimulate economic activity or increase allocative efficiency, however, and this may lend an illusion of productivity–Rapoport 1989, see also Ward et al 1995).

parameters; these breakpoints represent micro-systemic failures that create situations where hostility increases without structural impediment. These breakdowns produce discontinuous jumps in the escalation of hostility levels and signify an "unstable state" (until new control parameters are put in place or discontent is lessened); the "unstable state" allows rapid increases in hostility and a concomitant increase in the probability that greater forms/intensity of violence will be rationalized/justified.

It would appear from this brief discussion of threshold points that the first (in time) overt threshold point (i.e., militarization) is the most distinct and definitive of a transformation in the quality of the interaction; the second point (war) is almost impossible to identify precisely unless the parties are civil enough to ritualize that point by formal declaration (or in hindsight, which is the case in war research); and the third point (back to peace) may be very difficult to achieve as both parties are suffering losses that should increase their grievance, discontent, and hostility.[14] In would appear that the most politically efficacious and economically efficient point at which to intervene in an attempt to alter conflict outcomes toward greater peace would be <u>prior</u> to the point of transformation to militarization. Transformational points also signal shifts in conflict activities to qualitatively distinct conditions or dynamics; the transformed process dynamics then call for special management approaches. Of course, this is not an all or nothing proposition, it is a combined, complex conflict management system that best reflects the realities of conflict processes.

Marshall (1999) presents a simple model of a general social conflict process that focuses on the individual agent. In this model three transformation points are designated: 1) "conflict" –the point where the individual acknowledges that a specific conflict situation exists; 2) "mobilization" –the point at which the individual recognizes that the conflict is valued enough to escalate the investment in conflict resolution activities but where individual efforts are perceived ineffective or unlikely to be effective (seeks to cooperate/coordinate activities with other similarly affected individuals in contention with some identifiable target, "them"); and 3) the point where "violence" is initiated in the specific conflict process (see Figure 4). In this formulation, there are infinite conflict processes but three thresholds that are common and definitive; it is this common aspect that makes conflicts manageable.[15] The management strategy is multiple and complex. In brief, the development of societal infrastructures and the improvement of general prosperity in the relevant social context enables most individual (goal-seeking) actions to be channeled into cooperative, coordinated, or autonomous behaviors from the outset, that is, society provides proper context/content or otherwise facilitates individual achievement and so the potential for conflict is not realized in the vast majority of possible situations (i.e., the individual works within the system and the system works for the individual thus enabling greater interaction density without necessarily

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[14] The transformation "back to peace" may not be achieved, giving way to a condition of "unstable peace" where hostility remains high but threats of warfare and actual war may remain "dormant" or recur sporadically. This is the condition described by Azar, Jureidini, and McLaurin 1979, Azar 1983, and Schrodt 1983 as "protracted social conflict." This condition is operationally similar to the condition termed "enduring rivalry," see Goertz and Diehl 1993.

[15] Two other transformation points are assumed to bracket the conflict process: one, at the point of origination, "cognition" where the idea is transformed to action and, two, "abreaction" where the issue has been acted out and is transformed from action back to idea or stored in memory to inform subsequent ideas and actions.

increasing conflict levels). While the majority of potential conflicts are "caught" by the social facilitative and ideational structure, many are not so accommodated and simple goal-seeking behavior is transformed to conflict behavior at point (1). The goal now is perceived as an issue; as an issue, the individual is faced with the prospect of rising costs in goal satisfaction procedures. If the goal is under-valued (i.e., not worth the anticipated costs of conflict interaction), the issue is dropped and the conflict process ends (reaches the point of abreaction). If the goal is valued, the individual will seek petition for redress of the perceived grievance, that is, they will interact with the frustrating agent or a facilitating agent. If the system is flexible, it will absorb the majority of such petitions either by enabling their achievement, coopting the agent by substituting acceptable rewards for the agent's unacceptable goals, rechanneling the activity toward more successful procedures, or raising the costs of resolution so the issue is dropped.
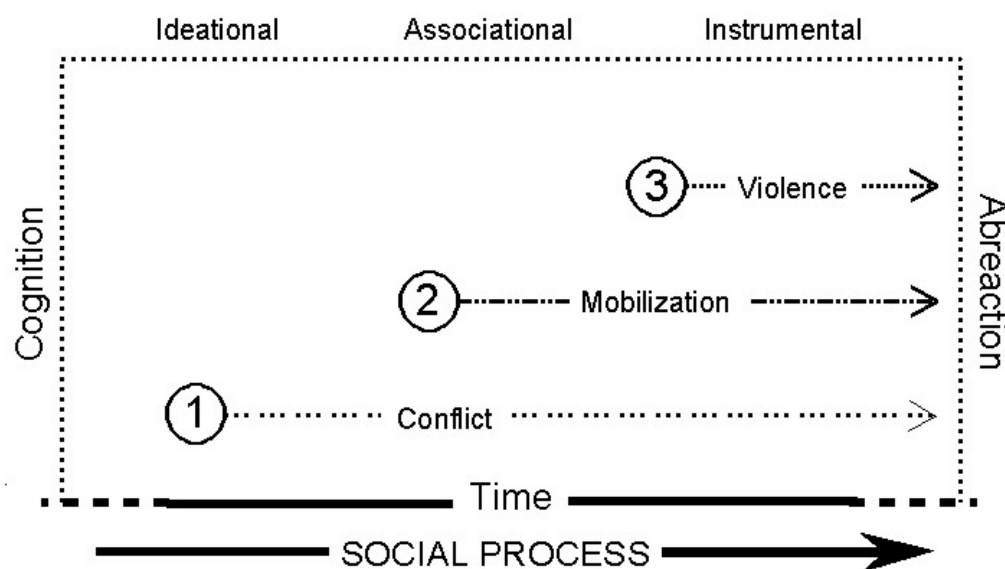

Figure 4: The Social Process Model (From Marshall 1999, 32)

Some conflict petitions will not be satisfied at the individual level and so the dissatisfied agent with seek more information and avenues in the will to proceed toward resolution. Transaction costs continue to increase, so the individual seeks other similarly affected (relatively deprived) individuals so they might pool resources, share the benefits of resolution, and increase their chances of goal attainment, that is, they mobilize. Mobilization requires a qualitative increase in investment of resources; a group must be formed and maintained at a cost (including free-rider costs−costs are not equally distributed) in addition to the costs of continuing the conflict (the target tends to increase

its resistence, or counter-mobilize, as it perceives more of a threat from a disaffected group than a similar number of atomized individuals). Net benefits from mobilization won't be realized until some time in the future, so again costs are considered against the value of the grievance. Many issues are dropped at this point and the ones that continue take on greater weight and complexity as the individuals combine interests in the goal, their sunk costs, and the independent value of association (e.g., maintaining the group and one's prestige in the group). It is this transformation that distinguishes liberal democratic from authoritarian social systems. Authoritarian systems perceive any unauthorized group mobilization as an unacceptable threat and so act to suppress mobilization activity or escalate the conflict process immediately to the third transformation by using violence to repress mobilization. Liberal democratic systems are accomplished at coopting and regulating group activities and channeling them into productive enterprises and system innovations; as a result, mobilization is valued and the additional societal dynamics stimulated by interest mobilization are harnessed for the general benefit. In addition, the costs of group failure are not as onerous in the tolerant society so the value-added by the individuals' attachment to the group or value-lost through separation from the group is lessened (i.e., identity is not threatened). However, should mobilization fail to achieve satisfaction, the individual may rationalize the utility of unilateral force and either seek group acceptance for this transformation of the conflict process or seek separation from the larger group of a faction that will. If the greater group justifies the use of force, the violent agents will enjoy resource support for their greatly increased costs of operation and refuge from the reaction by the target group to their provocations (mainly as anonymity). The transformation to violence, represents the final point where costs are assessed against the compounding values of the conflict issue; after this point "true" costs become increasingly difficult to account as human life, health, or livelihood do not "cost out" easily. At the point where force is contemplated, and especially once force is initiated, hostility becomes a powerful and unpredictable emotive component in the otherwise rational conflict process; hostility turned inward leads to self-abuse, under-achievement, and escapist behavior, hostility externalized leads to acts of coercion and violence (i.e., warfare or terrorism) against others. At this point, the rational element of material issues and goal-seeking behavior is complicated by irrational expectations, unreasonable value assessments, and unspecifiable identity linkages; material grievances are transformed to symbolic grievances that are difficult to articulate, comprehend, address, or satisfy.

Figure 5 adds the described political and economic functions to the social (conflict) process model as presented in Figure 4 above. Marshall's (1999, 100-102, footnote in the original) description of the model is quoted at length:

> To recap the Social Process model, it was proposed that there are three fundamental transformations in the social conflict process: 1) the politicization of a conflict situation ("conflict"--a subset of those affected and cognizant); 2) the mobilization of resources to solve the conflict ("mobilization"--a subset of those politicized); and 3) the utilization of violence to force a conflict settlement ("violence"--a subset of those mobilized). Each social transformation requires a qualitative and quantitative increase in resources expended and consumed. The main components of the theoretic political economy are overlaid on the social process model in [Figure 4] the *y*-axis on the left is a measure of the "probability of successful conflict resolution" (SCR) ranging from 0 (low) to 1 (high) and 2) the *y*-axis on the right is

a measure of the "social costs of conflict management" (CM) ranging from relatively low costs (low) to relatively high costs (high).

Over the course of the Social Process from Cognition to Abreaction an unsuccessfully managed conflict process will tend to persist, exacerbate, and escalate, eventually transforming to include the more-consumptive social activities within its interactive dynamics: politicization, mobilization, and violence. The probability of successful resolution (SCR) of the conflict situation will begin very high and diminish exponentially over the course of the conflict interaction and through its attendant transformations (represented as the curve sloping downward from left to right in the diagram--an unresolved conflict process will eventually "terminate" by attrition in the exhaustion or "war weariness" of the conflict parties).[16] The social costs of conflict management (CM; i.e., the total costs to society and system of the resources expended, consumed, diverted, destroyed, deformed, lost, dispersed, etc. and specific to the conflict process activities and externalities) will begin very low and increase exponentially over the course of the conflict process.

Social economic rationality (defined as successful conflict resolution, i.e., maximum security, at minimal social cost) dictates that conflict processes should be successfully resolved as early in the process as is possible and feasible. The viable social identity group will institutionalize successful conflict management procedures to include the vast majority of potential conflict situations and thus accomplish such economic rationality to a large extent structurally. This is the economic contribution of the societal proto-state to society and it is the direct result of successful conflict management. Successful conflict management emphasizes sociational strategies and actively pursues *normative strategies* of conflict management. Normative strategies concentrate on the socialization of members, the regulation of provocative activities, and the institutionalization of conflict management procedures so as to gain a high probability of success in anticipation of politicization and in the accessibility of the system to accommodate aggrieved individuals. *Organizational strategies* focus on the capacity of the system to incorporate the participation of mobilized interest groups and to facilitate appropriate procedural innovations.

Failures of a society's normative strategies will often result in very high profile, extremely risky, and enormously costly conflict confrontations that include substantial political violence. These situations involve reciprocal applications of instrumental force and necessitate *utilitarian strategies* of conflict management. Utilitarian strategies are relatively simple to comprehend and therein lies their "fatal attraction." Utilitarian strategies concentrate on the actual or threatened unilateral application of superior physical force to alter the conflict behavior of the opposing party in an obvious, hostile encounter (i.e, the enemy other). As such, utilitarian strategies focus on the relative capabilities and capacitance of the opposing

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[16] "Successful" conflict resolution refers to dispute solutions that are mutually acceptable and can be administratively managed in the future according to the terms of a multilateral agreement including all parties to the conflict. An "unsuccessful" resolution will be imposed unilaterally through the agency of superior force by one side in the dispute and will require a continual application of instrumental coercion to maintain the outcome and "stabilize" the relationship in the future. "Unsuccessful" conflict resolutions are likely to flare into conflict once again if the instrumental conditions shift to favor the "reactive" party; unilateral solutions tend to reinforce conflict grievances, complicate them by the added grievance of "unequal" terms and status, and cause them to persist.

social groups. (*Cf.*, Bueno de Mesquita 1981) Over-reliance on utilitarian strategies diminishes the productive capacity of the society and so decreases the material capabilities of the actor while increasing the number of its potential opponents (i.e., the "threatened others").

Thus, the superior performance of the liberal democracies is attributable primarily to their primary reliance on and successful use of normative strategies in societal relations (i.e., maximal societal efficiency). Unfortunately, these highly successful societies have not been similarly successful in their conflict management approach to systemic interactions (i.e., they enjoy partial success: they are primarily normative and thus benefit from high systemic efficiency when interacting with other liberal democracies--the "democratic peace" proposition--but are extremely utilitarian and thus highly inefficient when dealing with the rest of the world).

It may be argued that there is a third strategy for managing conflict processes that is situated in between the normative and utilitarian strategies and denoted in Figure 5 by brackets: "organizational strategies." Organizational strategies correspond to the mobilization transformation and associational portion of the social (conflict) process; they focus on issue-regime construction and institution-building to accommodate interest group mobilization and pluralism. It should also be noted that what makes the compound, or total, conflict management function of liberal democracy so universally appealing is the convergence or coincidence of moral and rational imperatives: security and prosperity, and the capacity to accommodate identity.
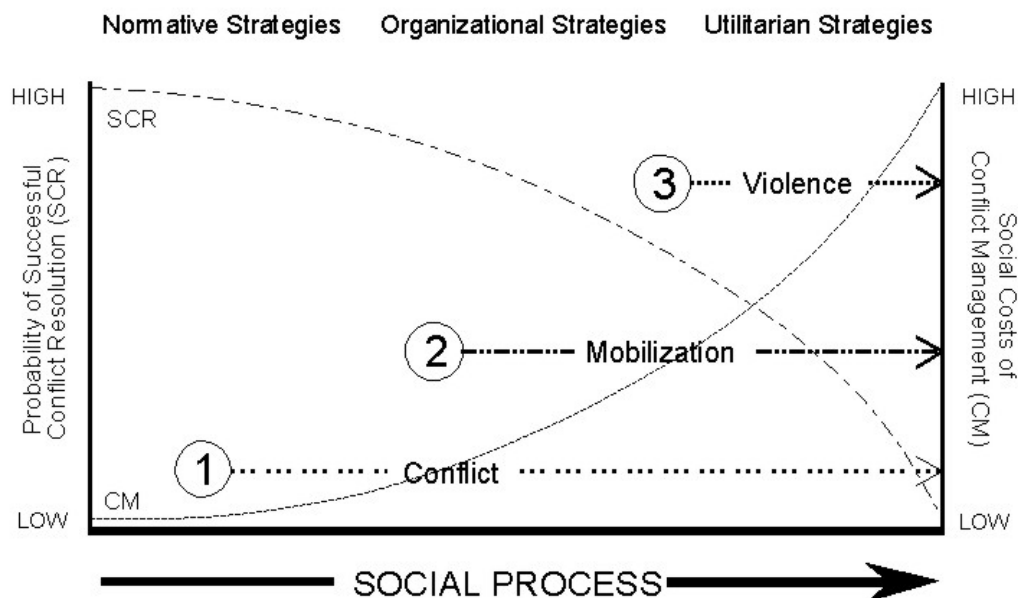
Political Economy of Conflict Management

Figure 5: The Political Economy of Conflict Management (From Marshall 1999, 101)

The social process models are designed to be compatible with our extant knowledge and understandings of conflict processes at all levels of aggregation: individual, group, and system. What distinguishes conflict processes at the various "levels of analysis" are mainly 1) issues of transparency in the mobilization/associational phase (as conflict processes become regularized, they become routinized, institutionalized, ritualized, and stylized; organizations, once established, take on multiple functions, making the monitoring of mobilizational dynamics difficult to perceive and specify, that is, "translucent" or "opaque") and 2) conflict processes involve ever increasing levels of aggregation and numbers of affected individuals, further complicating the dynamics. Yet, in spite of these difficulties of scale and clarity, complex conflict management strategies have proven mostly effective in minimizing the system-wide resort to force when mechanisms at all levels are in place and operative. Important complicating factors are the resonating and reverberating dynamics of emotion, security, and rationality (or the conflict-operant conditions: hostility, insecurity, capability). Strict rational-choice analysis tends to discount emotive and existential dynamics and, thus, does not account for their confounding and escalatory influences. This discussion of conflict process can not be definitive of the complexity of the subject yet it does create an image and a context in which to situate knowledge and assess innovation in the scientific study of international conflict processes and international relations.

The discussions have done little to help narrow the scope of inquiry; indeed, the scope of inquiry is widened to approximate that of the entire field of international relations. A perspective, or "processual focus," has been established, however, that posits a preference for holistic synthesis as the appropriate view from which to examine international conflict processes. In strategic terms, this perspective allows for multiple access points in conflict processes thereby compounding information and familiarity with dynamics and additively increasing probabilities of attaining successful conflict management. In economic terms, it presents opportunities for maximizing early, low-cost management successes and minimizing the incidence and escalation of conflicts to the more costly and unmanageable forms characterized by violence and hostility. In political terms, it empowers greater portions of the societal system to become involved in contributory, coordinated conflict management schemes. In social terms, it allows for the inclusion of identity diversity, thereby removing it as a powerful ancillary motivation in conflict interaction sequences. This is not necessarily a pacifist system; it calls for multiple structures to condition conflict dynamics through normative, associative, and utilitarian strategies, yet it clearly prioritizes from normative through the associative to the utilitarian. It especially argues against the perceived utility of violence and coercion for social engineering (social control) purposes. Coercion and violence should only be used in deference to higher priority strategies, that is, in normatively-prescribed and associatively-supported applications to enforce legitimate societal order (rule of law) and not used to impose such order (authoritarianism).

Major Scientific Advances and Research Streams

The preceding discussions have devised two images of "process" in the scientific study of international conflict: one image focuses on the research process itself and the diversity of values and perspectives that are imbedded in research dynamics; a second image focuses on the definitional process in order to gain better focus on the special topic of inquiry. The first image was enigmatic as it was predicated on essentially contested and unresolvable philosophical questions underlying research objectives and agendas; a solution was proposed that called for a synthetic unity based on a universal morality centered in the survival imperative. The essence of this principle is often referred to as "non-discrimination." The second image was necessarily eclectic, or inter-subjective, as it sought to gain definition and narrow the focus on a subject of inquiry through an examination of the concepts used to describe the topic and the various instances in the research milieu of international relations where "conflict processes" have been a specific topic of discussion. A working definition of "conflict process" was presented that is based on transformational thresholds, multiple access points and general conflict management strategies, a (legalistic) preferencing for normative and associational (i.e., non-violent) methods, and a complex (fully integrated and coordinated) systemic approach to the conflict management process. Each of these images was derived according to the precepts of "scientific method," yet each image is more constructive or creative than it is technical or mechanistic. As a result, each image appears to gain greater focus on what might be considered to be an "unscientific" conclusion: each image expands rather than narrows the scope of inquiry; the models complicate rather than simplify our comprehension of the subject of inquiry. Yet, we appear to be gaining clarity. Because the central concept itself remains ill-defined in the literature, it is not clear that a full accounting of progress relevant to this special scientific inquiry has been, or can be, conducted. It has been proposed that the inquiry in "conflict processes" in its broadest sense approximates the scope of inquiry of the entire field of international relations and, by implication, the entire inter-disciplinary realm of the social and behavioral sciences. One crucial aspect of the conflict process that appears to distinguish such inquiry from the entirety of human existence is the actual occurrence, or heightened probability of the occurrence, of violent events, but the actual occurrence of such violent events or the anticipation of such events appears to be conditioned by both spatial, temporal, societal, normative, and technical contextual factors. What does seem clear from the examination so far is that the incorporation of process dynamics in social inquiry has been a very recent innovation and that "limitations" of information at the global level of aggregation have retarded its application in international relations especially.

Haftendorn (1991) speaks about a procession in security perspectives that has shifted the focus of inquiry from the particularist standpoint of the nation (i.e., national security) to the more general standpoint of the state-system (i.e., international security) with some sense that the security focus will eventually proceed toward a holistic standpoint (i.e., global security); such procession depends on general progress in social learning and the progressive application of technical precepts to social structures: "in building institutions around common interests, in facilitating the evolution of shared norms and principles, and in furthering a common understanding of the problems confronting [hu]mankind" (1991, 12). One way to systematically assess such progress in social learning over the target period is to look at the procession of viewpoints published in the journal of the International Studies Association (ISA), *International Studies Quarterly (ISQ)*; that will be the

subject of the first treatment following. A second way to assess progress is to identify the important changes apparent in the international relations literature; that is the subject of the second section.

Research in International Studies–A Mainstream Narrative

The *ISQ* is the official journal of the ISA; it is a vehicle through which the ISA "seeks to acquaint a broad audience of readers to the best work being done in the variety of intellectual traditions included under the rubric of international studies." This journal was chosen for systematic study for several reasons: 1) the ISA is the main professional association of international scholars proficient in the English language; 2) the *ISQ* ought therefore to be considered a representative sample of the pertinent literature, its "best work"; 3) the sample should be reflective of the topics of interest to international scholars, the approaches and perspectives deemed important and appropriate by the majority of those scholars, and, also, the inherent biases of the discipline; and 4) the scope of the journal is broadly construed so as to be as inclusive as possible and to be congruent with the mission of the ISA. A survey of this journal should reveal the main research streams, some information on how to gauge the relative importance of those streams, and, in comparison with a general knowledge of the literature in the field, some indication of how to place research, both that included within the several streams that comprise the mainstream and that excluded from the mainstream of the field.

What is perhaps most strikingly evident from a survey of the articles published in the *ISQ* over the period, 1976-1996, is a general lack of major innovative "advances." Most of the main research streams have ideational antecedents in the classic literature of the field, thus the notion of "intellectual traditions." Nothing approaching what might be considered the appearance of a new "research stream" or a "major scientific advance" is evident in that literature. What does appear evident is a certain periodicity or faddishness to research; research typically follows major political changes rather than anticipating such changes. One might argue that the publication process slows the presentation of research, but even when allowing for a reasonable publication lag it seems clear that research remains mainly responsive to unfolding world events rather than vice versa. There is certainly a sense of increasing sophistication, elucidation, and elaboration of the "variety of research traditions." And the scientific rigor , as already argued above, can be seen to be increasing as a function of the learning process and the competition among perspectives. The following list briefly describes research developments culled from the *ISQ* literature. Each article is categorized according to the main research tradition to which the author(s) claim(s) to ascribe. The first line of each listing identifies a "research tradition" and provides the number of articles fitting that category for each of three seven-year periods (1-2-3): 1) 1976-1982, 2) 1983-1989, and 3) 1990-1996. Comments regarding trends relating to that category follow each heading.

- Human Rights/Dignity/Justice (12-1-1)
A strong topic in the late 1970s that disappears in 1982; it reappears in the 1990s, mostly as a part of a widening debate over reformulating the post-Cold War security agenda.

- United Nations/International Law/International Organization (10-5-2)

Interest in supraordinate institutions, evident early, also drops off in the early 1980s (1983); the literature shifts in focus to reflect a growing interest in international economic organizations and regimes. NATO becomes a prominent research interest in 1989/90.

- Interdependence/Democracy/Democratization (3-4-3) and Regional Integration (1-3-3)

The very marginal interest in interdependence/idealism/integration appears to reflect the strength, and a preoccupation with, the precepts and methodological "neatness" of state-centric realism. It is especially surprising that there is almost no attention to democratization processes (i.e., transitions from authoritarian systems) even though there are major claims being made about the positive benefits of democracy in terms of both prosperity and security performance. There is even less interest in regional integration or security schemes, including the European Union; NATO is the exception.

- Development (5-10-9)

Research on development is mainly concerned with issues in 'third world' economics (more precisely, issues of concern to advanced countries involved in 'third world' economies); topics shift periodically beginning with issues of trade, then foreign investment, then increasing debt and the debt crisis. Issues related to problems of income inequality are prevalent in the 1980s.

- Cooperation/Regimes/Hegemony (7-15-10)

Research on cooperation and coordination of policy is primarily concerned with the practices of the advanced economies of the West. Hegemony appears as a topic in 1981, first with an interest in explaining the relative decline of (US) hegemonic power and then (in the 1990s) as a source of world leadership, authority, or stability.

- Strategic/Superpower/Nuclear/Deterrence (8-5-4)

The Cold War confrontation between the superpowers appears to have lost its strength and appeal by the mid-1970s; articles are concerned mainly with nuclear issues and deterrence theory although interest shifted to issues of superpower reciprocity in 1990.

- Arms Races/Arms Transfers/Arms Control (5-5-3)

There appears to be very little interest in arms issues during this period; arms races are predominant through the mid-1980s with some interest shifting to issues of arms control in the late-1980s. Arms transfers to 'third world' states show marginal interest in the literature.

- Security/Intervention/Sanctions (2-6-12)

A major debate over the meaning of "security" is initiated in 1990; the debate appears to mimic debates over "who won the Cold war?" and "what should we learn from this dramatic change in circumstances?" Purists struggle to maintain the security focus on strategic/military issues (the narrow concept) whereas critics argue to widen the agenda to include common (trans-border) threats to the quality of life, such as migration, disease, and environmental degradation; anticipated problems of resource scarcity; or problems of uneven distribution or allocation of resources. There is little attention to issues of security in the 'third world' as 'third world' politics are mainly viewed

as a potential security threat to the advanced countries; interest in the 'third world' is contained mainly in (some) research on the utility of interventions and sanctions. An interesting development is the appearance in 1990 of research on "enduring rivalries," a process approach to the study of hostile conflict interactions involving pairs of major power states. This appears to be an attempt to come to grips with the Cold War experience and an acknowledgment that multiple conflict episodes involving the same pairs of actors over time are sequentially dependent or otherwise related phenomena.

- Comparative Foreign Policy/Comparative Politics (18-5-15)

Articles in this category cover a broad range of mainly case-study looks into the affairs of countries enjoying topical interest. There is an sharp dip in this type of coverage in the 1980s that has no obvious explanation, except perhaps a renewed preoccupation with the Soviet Union and the Cold War.

- Diplomacy/Decision Making/Game Theory (19-22-25)

Diplomacy as a special topic of research disappears by the late-1970s; it is replaced by research in decision making (based mainly on the United States' experiences). An overriding interest in political elites shifts toward a primary interest in public opinion in 1980. Game theory is often used as a vehicle or a special language in studies of decision making rather than a separate topic or theory of political behavior.

- Alliances/Balance of Power/Realism (7-2-9)

Research cast specifically in realist precepts and structures drops off in 1982 and is resurrected in 1989/90 with renewed interest in NATO.

- Post-realism/"Third Debate" (0-5-10)

Identity first appears as an issue of research in 1987. There is a veritable explosion of "reflectivist" philosophical debate in the period, 1989-91, that just as quickly drops off. Feminism is almost completely invisible (only one article, on gender, in 1985); female authors are rarely published in *ISQ*, accounting for only 0.097 of the total over the entire target period. There is some change noted over the course of the three seven-year periods: (1) 0.065, (2) 0.070, (3) 0.154.

- Literature Reviews/Theory Testing/Methodology (2-11-3)

This represents a very amorphous category of research. What seems most important to note here is the appearance of the Mershon review series in 1991 (the first review covers the topic of security studies); there is a recognition within the discipline that the literature is becoming increasingly unwieldy and that some effort needs to be expended to weave disparate research strands together into topical narrative summaries. The Mershon series appears to strike a chord as it quickly becomes a separate journal supplement in 1994; review topics include: (1994) the death of the cold war, social psychology of identity, French IR, domestic politics and war proneness, nuclear proliferation; (1995) pragmatics of history, decision models, defense conversion, structural realism and the causes of war, foreign policy analysis; (1996) German foreign policy, computatutional modeling, international regimes, broadening the agenda of security studies; (1997) institutions,

interdependence and conflict, democratic peace.[17] Other practical issues in evidence are computer applications and simulations and issues specific to events data (e.g., how to reconcile, or "splice," events data from different sources and the "machine coding" of events data). Articles calling for greater synthesis of "competing" theories first appears in 1980 and remains a prominent theme; the topic of diversity in theory and research first appears in 1986.

- Systemic Approaches (9-5-11) and World-Systems/Dependency (8-10-2)

Although there appears to be a steady interest in the applications of systems theory to international relations, there is serious hesitation in developing a systems approach: interdependence is the euphemism for global relations standing at the brink of coherency or cogency. Dyadic, statist research still prevails. One theory (and one off-shoot of that theory) that does purport a distinct, general systems approach is Wallerstein's world-system theory (and the "dependency" variant used to explain the uneven development that disadvantages the 'third world'); that approach garners steady interest that suddenly disappears in 1990.

- Conflict (12-14-7)

The "conflict" category refers to research specific to domestic conflict dynamics that may have an impact on international relations or a commonality among states. What is most striking here is the strength of interest in issues of scarcity, ecology, and the environment in the 1970s and the disappearance of those issues in the mid-1980s. Also significant is the first appearance of the topic of "state terror" (i.e., use of terror by agents of the state to subdue constituencies) in 1988. Ethnicity first appears as a topic in 1987. The marginal interest in domestic conflict issues appears to drop off in the 1990s, ironically, just as attention to international involvement in civil warfare situations increases. As one conflict scholar has succinctly stated, "IR scholarship has contributed little to our understanding of the causes of political disasters within states. The relevant bodies of evidence and theory about state breakdowns, communal conflict, and massive human rights violations are to be found in macrosociology and comparative politics, where theoretical disagreements about the causes of these phenomena are narrower and more readily bridged by appeals to evidence."[18]

- Crisis/Early Warning/Forecasting (12-9-2)

The topic of "crisis" is very hot in the 1970s; interest falls off in the 1980s and is relegated mainly to practical applications of the crisis concept to specific situations. Crisis disappears as a special topic by 1992. Interest in developing an early warning or forecasting capability is also hot early in the period but disappears around 1984.

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[17] In what can be considered the *Mershon* mission statement, Hermann and Woyach (1994) list three obstacles to the realization of the dream of a more vital and meaningful intellectual discipline in IR: specialization and division, explosion of information, and an ethnocentric bias.

[18] Ted Robert Gurr, quoted from a commentary written as part of a forum debate on the viability of a UN Internet early warning system; *Mershon International Studies Review* 39(1995):318-9.

- War/War Cycles (3-9-18)

It is interesting to note that the subject of war gains greater interest as Cold War tensions begin to relax. Interest in the topic of war cycles is steady in the 1980s and 1990s, however a shift in explanatory power is apparent as research in the 1980s is characterized by reference to economic cycles whereas later research is characterized by hegemonic shifts or world leadership cycles.

- Peace/Conflict Management (4-1-4)

Issues of peace research and conflict management techniques are largely missing and/or invisible during the entire period. Most notable in this regard is the appearance of "democratic peace" research in 1994-5.

ISA Presidential Addresses–An Alternative Narrative

The *ISQ* echoes the discordant voices that characterize the full breadth of perspectives in the field of international studies. The image it paints is one of mass confusion, incapacitating incoherence, and strident contention among irreconcilable interests and positions. And it is this image that most often disarms students of international relations who struggle to make sense of the cacophony. The image posed reproduces the predominate IR image of anarchy (bordering on chaos). The majority of students, having been thus exposed, are only too eager to seek refuge in a political posture, to seize on a simplified, coherent (partial) image: "I am a realist because I know that people are evil, aggressive, and self-centered;" "I am an idealist because people I know are good, kind, and respectful;" "I am a radical because I see that the capable utilize their talents to exploit the less fortunate." A downside to scientism has been the development of a multitude of increasing technical and stilted languages and jargon, a "Tower of Babel" that is increasingly inaccessible to general (educated) audiences or across specializations, perhaps even within a specialization.

An alternative image is conjured by stringing together the annual series of ISA Presidential Addresses. In contrast to the general state of the field, the viewpoints of the "leading citizens" of that field are much more fundamentally consistent; the image drawn is more compatible, complementary, and confident. It is an image of developing comprehension, expanding knowledge, and progressive management potential.[19]

- 1977 Herbert C. Kelman–Human Dignity

"[P]roposes (1) that the conditions for realizing human dignity (which include international peace in addition to social justice and individual freedom) must be created through worldwide efforts, given our increasing interdependence; (2) that the criteria for assessing whether politics and institutional arrangements are consistent with human dignity must be universalistic, while remaining respectful of cultural and political differences; and (3) that the social processes whereby human dignity is extended and protected are inherently dialectical, since they require both the fulfillment and the inhibition of nationalistic demands" (1977, 529).

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[19] The presidential addresses cited are all those published in the *ISQ*; not all annual adresses are published.

- 1979 Ole R. Holsti–US Foreign Policy

"In is by now a commonplace observation that the 'age of consensus' on questions of foreign policy was a casualty of...Vietnam. This article focuses on the resulting domestic cleavages [in beliefs]...about the nature of the global system, the sources of threats to a just and stable world order, the appropriate international role for the United States, and the goals, strategies, and tactics that should guide American external relations" (1979, 339).

- 1980 Dina A. Zinnes–Theoretical Puzzles

"Although everyone is for 'more theory,' most of us have rather little understanding of how to get 'more theory.' This essay suggests one approach to theory development: thinking in terms of puzzles" (1980b, 315). She poses three puzzles: Do nations interact? Why are some nations war prone? Is polarization a precondition for war? She concludes: "The clash of evidence requires us to pose a process that would permit us to account for the difference....It is this type of reasoning process, the sorting and sifting of evidence, that would seem to be most valuable with regard to puzzlement" (1980b, 338-9).

- 1981 Henry Teune–Global Political Economy

"[T]his is a call for...scholars...to create a new global political economy. The ingredients...include a description and explanation of how it works, a theory defining and justifying what is 'good' and 'just,' an interpretation to make it understandable, and a developmental theory of how the system evolved and how it will change" (1981, 523).

- 1983 Bruce Russett–Prosperity and Peace

"Not only are peace and prosperity highly desirable goals independently, they may be linked causally to each other" (1983, 381).

- 1984 James N. Rosenau–Cascading Interdependence

"On the presumption that the structures of global affairs are undergoing a profound crisis of authority and other changes of comparable magnitude, the analysis seeks to build a comprehensive theory of world politics that synthesizes these developments at micro as well as macro levels....In [the context of 'cascading interdependence'] governments are posited as increasingly ineffective as international actors and individuals as increasingly skilled in their public roles" (1984, 245).

- 1985 J. David Singer–Poverty and War

"Two basic problems today are poverty and war, and the evidence suggests that very little progress can be made in the former until considerable progress has been made in regard to the latter. Armed rivalry between East and West so permeates and corrupts the underdeveloped societies that neither resources nor infrastructure can be put into place until that rivalry is brought under control" (1985, 245).

- 1986 K. J. Holsti−Multiple Realities

"Researchers' values, personal moods of optimism and pessimism, and an overabundance of data and information vitally affect theoretical and empirical work in international relations.. A consequence is the difficulty of creating reasonably reliable portraits or maps of the world and of trends therein....[This] essay demonstrates how data can be used to construct an optimistic portrayal of the achievements of developing nations, and of the declining incidence of some kinds of wars" (1986, 355).

- 1988 Robert O. Keohane−Institutions

"To understand international cooperation and discord, it is necessary to develop a knowledge of how international institutions work, and how they change....A critical comparison of rationalistic and reflective views suggests hypotheses and directions for the development of better-formulated...[empirical] research programs...and perhaps even [lead to] an eventual synthesis of the two perspectives" (1988, 379).

- 1990 Charles F. Hermann−Change

"We are in a period of profound change in international relations and foreign policy. These developments call attention to the state of our knowledge about change processes in governmental decisionmaking" (1990, 3).

- 1992 Hayward R. Alker, Jr.−Humanistic Moment

"[The author] seeks to recover the humanist ideals and approaches which sometimes get lost in our modern strivings for scientific rigor. In the Renaissance, human character, state forms, and international institutions were recognized as artistic constructions" (1992, 347).

- 1993 Charles W. Kegley, Jr.−Neoidealist Moment

"[S]uggests that the recent transformations in world politics have created a hospitable home for the reconstruction of realism inspired by Wilsonian idealism, and outlines a revised research agenda consistent with these new conditions and the hypotheses the idealist tradition raises for our field's attention" (1993, 131).

- 1994 Ted Robert Gurr−Ethnopolitical Conflict

"The post-Cold war surge in so-called tribal conflict is shown here to be the continuation of a trend that began in the 1960s....Communal conflicts...have not increased in frequency or severity...[n]or is there a strong global force leading toward further fragmentation of the state system....The most protracted and deadly ethnopolitical conflicts...will continue to pose severe humanitarian problems but are foreseeable and, in principle, are capable of being contained and transformed through constructive regional and international action" (1994, 347).

- 1995 Susan Strange−Advocacy and Interdisciplinary Collaboration

Calls for a broadening of the intellectual community (to overcome American predominance) and domain (to incorporate the "new dangers" threatening to disrupt the global system of economic prosperity) in international studies. These "new dangers...cannot be studied, researched, or taught without interdisciplinary collaboration...these new problems make a world-system rather than a

narrow, foreign-policy approach all the more necessary" (1995, 292). "What is needed therefore is a transnational coalition of forces concerned for the long-term welfare and indeed survival of global civil society and of the managed market economy that sustains it" (1995, 294). The "ISA has an important role to play...[as] an embryonic epistemic community biased toward global governance...[and] qualified to encourage work that will articulate ...universalist values and aspirations and generate ideas for practical measures and strategies to bring about change" (1995, 295).

• 1996 Davis B. Bobrow–Complex Insecurity
"Insecurity in international affairs is inherently complex and diverse....There...is a need for an orienting metaphor appropriate to unavoidable complexity and diversity. That of disease, illness, and decline provides useful emphases with respect to threats, strategies for their prevention and treatment, and the conduct and mutual relevance of insecurity specializations" (1996, 435).

<div align="center">Breakthroughs and Breakdowns</div>

The images drawn from the survey of "the best work being done" uncovered some trends in research and some important omissions from the mainstream vision. Although the general impression cast is that the field remains rather erratic or somnambular, the images derived provide a suitable context for placing the current inquiry within the general research stream. The contrasting images distilled from the *ISQ* draw attention to an important interactive and symbiotic dynamic in the scientific research process, that is, between the micro and macro levels of analysis. Due to the inherent limitations of scientific inquiry in the present context (i.e., the compounded problems of complexity, process, and generally weak and missing data) formal analysis can only take place at the micro, and perhaps an intermediate, level; this is a necessary first step in the scientific research process. A second step in the process is to gather related research into a comparative review and synthesize the material at the intermediate level. A third step, then, requires those most capable of what has been called "scientific intuition" to try to place research "findings" into some sort of meaningful context: a holistic "big picture." The multiple images at multiple stages from multiple perspectives then inform and inspire new research treatments and identify research "gaps" and should be viable enough to inform practical policy and decision making in applied settings. In this form of intellectual pluralism, synthesis is the key to unveiling comprehension and giving direction to policy.

While the discussion so far has produced some sense of the major research streams in international relations and identified some of the main trends in that body of research, the angle cast has been too wide to focus on any of the specific qualities that have characterized the process in the contemporary period. This section will adopt more of an "events" orientation to discuss some of the developments that have had an important impact on the scientific study of international conflict processes. The general approach adopted will be to examine proposed breakthroughs and breakdowns in the general conflict research process. A general observation that informs this treatment is that research in international relations has been very reactive to world political events and the derived theoretic explanations have tended to remain postdictive: attempts to make sense of what might be otherwise thought of as major shifts in "kaleidoscopic configurations." They fail to identify the "hand" (i.e., the dynamic) that turns the machine; they appear content to lend

interpretation to the patterns that emerge from the process. In this analogy, without a clear understanding of the mechanism and dynamics of the kaleidoscope, the patterns that emerge will remain obscured by the substantive element of randomness and interpretations will tend to diverge as ideology rather than converge as knowledge.

Instruments (Tools of the Trade)

Data Development.   Perhaps the most important breakthrough has come as a result of the steady progress in the development of information and communications technologies. This progress would probably have remained a marginal influence on the quality of international relations had it not occurred in conjunction with a steady expansion in nongovernmental trade and cultural relations. The development of a global network of informal communication and information exchanges coupled with the expansion of (more or less) mutually advantageous trade between producers and consumers of tangible goods undercut the state's traditional monopoly on information and communication and conditioned its authority through the development of independent standards and performance criteria. The development of alternative, authoritative perspectives on state behavior has eroded the state's monopoly on information and control over knowledge and has led to the evolutionary transformation of world politics from a secretive, conspiratorial, contentious system of closed-state units to an increasingly open, exchange society. Authoritarian regimes can not count on the blind acquiescence of captive populations to defer "popular sovereignty" to arbitrary standards of conduct and power imperatives steeped in *raison d'etat*; states must increasingly compete for citizens' loyalty with alternative sources of identity and authority. As a result, most states have been "forced" to strike a balance between liberalization and security justifications for the survival of draconian authority structures. Insecurity remains the primary rationalization for the continued survival of authoritarian systems, but even under the most intense pressure these surviving regimes are finding that accommodations must be struck, either with internal forces or external sources of support. State leaders have found that, in order to retain some measure of control over information diffusion (and the potential for dissent) and thereby maintain their status and prestige, they must provide information about themselves or face the prospect that such information will be provided solely by their detractors, those sources most likely to cast the regime in a negative image. That is, the state has become an information competitor rather than a monopoly propagandist. This transformative process appears to have culminated in the 1970s. The transformation was heralded at that time by a shift in procedure at the United Nations that reflected a new willingness to accept information from nongovernmental organizations, publicize state intransigence, and, thereby, pressure change in state policies, especially in regard to human rights practices. Indeed, by the mid-1970s there is a discernible roll-back in the standard state practice of suppressing all information on internal affairs. Instead, states rely on their superior status and capabilities to gain "spin-advantage" in the free flow among global information suppliers and consumers. By 1995, state secrecy and the problem of uncertainty in international affairs was confined mainly to military and state security matters and even those areas are being opened by advances in surveillance technologies and the promulgation of open information laws. At present, only a handful of "old order" closed-states remain.

The dramatic shift in the availability of information has quickly changed conditions from one characterized by scarcity to one of overload. Reliability and accuracy remain a problem, however. Information is available from multiple sources but there are often vast discrepancies in the

information presented that must somehow be reconciled; a notable tendency in this regard has been to circulate all information and let the consumer beware. This tendency places increasing pressure on individuals to make critical judgements on the quality of information they receive, thus raising the importance of socialization and education in information processing. Even in those areas where information is not viewed as having important political ramifications, that is, where there are no obvious incentives for disinformation or distortion of figures, problems of cross-unit accounting and comparability erode data precision and infuse data collections with unaccountable error.

Figure 6 presents a graphic illustration of what might be called "loss-of power gradients" in the quantification and data accumulation processes at the global level of aggregation. Four quantification problems are identified: time, type, aggregation, and formalization; three accumulation problems are also listed: collection, codification, and compilation. The "loss-of-power gradient" refers to a decay factor in the accuracy and reliability components across an information "span" such that the greater the "distance" from the "optimal performance core" the greater the "size" of the error component contained in the quantified data. The problems listed are not exhaustive of the quantification and accumulation problems that affect research data, but they are the main components contributing critical, structured biases in the error terms (i.e., error that is not simply randomly distributed due to inaccuracies of measurement or specification). A brief description of the data problems will be helpful.

Of the four quantification problems, the "time" and "formalization" categories are most similar and most pervasive. "Time" refers to temporal limitations: in general, the farther back in time the less precise the information. Similarly, the less formal the institutionalization ("formalization") of the primary record keeping unit (usually some agency of the state) the less precise the information; in other words, the advanced industrial countries have recorded better information on a wider variety of topics with less intentional and unintentional distortion.[20] Less prosperous countries keep less reliable records on a far narrower variety of topics; the poorest states and those most riven by internal cleavages may have little or no accurate information on any topic, most figures being speculative at best and pure fabrication at worst. The "type" category refers to the nature of the information itself: some information is more easily, readily, and consistently quantified (i.e., measured and specified) whereas other types of information rely heavily on subjective conceptualization for both measurement and specification. In this category of information, the error may well be consistently "applied" within that particular variable (i.e, the error is considered random and unbiased rather than biased); the problem comes mainly when variables are combined in analysis such that each variable has a distinct relational bias to other variables in an equation. Social phenomena are complex mixtures of factors and it is especially difficult to accurately discriminate and separate information into discrete "bits;" as such, variables are not perfectly independent data bytes. The boundaries imposed by our classification criteria determine how we categorize each "case" in the statistical "population." Many types of information are not highly discrete qualities and

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[20] The use of the adjective "formal" here is somewhat problematic in referring to institutionalization.. It is here meant to refer to a quality similar to that associated with "formal theory": denoting a conscientious and rigorous method of information gathering that is biased toward accuracy rather than utility. It is the utility, or usefulness, of information that leads authoritarian states to control information flows, selecting or manufacturing information that privileges the regime and eliminating information that undermines those privileges. Lesser-developed political institutions tend to exhibit both greater incompetence (unintentional bias) and greater manipulation (intentional bias) of information.

the "cases" tend to range along a distribution spectrum; with this type of information, where the boundaries are drawn between categories heavily influences the comparative statistics derived from quantitative analysis. It is often the "borderline cases" that determine statistical significance, especially in "large-n" analyses. The fourth quantification problem affects mainly the types of analyses that can be performed: "aggregation" refers to the status of actors whose actions or attributes are being quantified. State actors enjoy the greatest data "focus," so state actions and attributes will be the most precise object data and state-state interactions will be the most precise relational data. Nonstate (group) actors will have far less precise information and individuals even less. Political information about state-nonstate interactions are relatively rare and far less precise, nonstate-nonstate interactions are almost completely invisible, and so on.
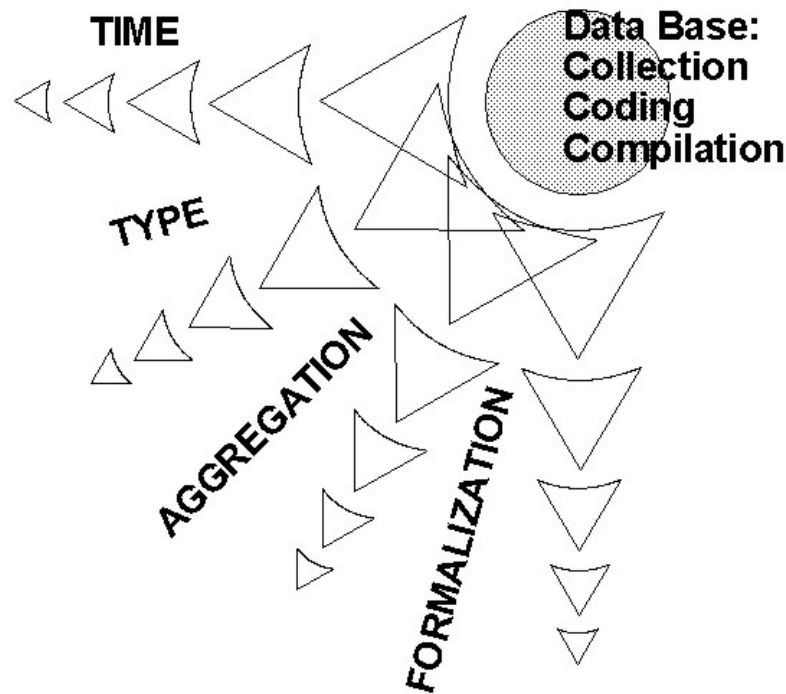

Figure 6: The Loss-of-Power Gradient in the Quantification of Social Phenomena

Data accumulation problems refer to systematic human error in the collection, codification, and compilation processes that culminate in the construction of the data bases that then become the instruments for statistical manipulation by political analysts. The "collection" of data is a very expensive, tedious, and time-consuming process that requires some serious decisions be made about what kinds of information will be collected, in what ways, and from what sources. These decisions must be made intuitively, for the most part; often, we can not be sure exactly what information will be needed until we have had a chance to test some preliminary hypotheses. However, the data

collection process demands that a lot of the related data be collected simultaneously. If it is discovered later that a crucial variable is needed but not available the entire collection process may have to be duplicated, basically doubling the cost and time of collection. Fine-tuning of variable operationalization or specification is equally cost-prohibitive; we are often faced with the prospect of using flawed data or redoing collection procedures. Such decisions are necessarily made by the original collectors in light of their original needs and resource limitations; such information on collection decisions and procedures is rarely passed on to the consumer. The originator may recognize the inherent weaknesses of their data and consciously avoid certain procedures that would be inappropriate to the information and error contained in the data; secondary users, oblivious to the data's specific limitations are apt to assume maximum precision and fail to account for the special characteristics of the data in their analyses. "Codification" problems are probably the most well-known of the accumulation errors and are those that receive the greatest attention from the data collectors. Inter-coder reliability problems can be minimized through proper specification and training, but the complications inherent in the process are lost to secondary users. Critical decisions are made in order to maximize coder reliability but those decisions are usually not broadcast in detail to users. As such, it is not always clear exactly what any single variable is purported to measure or what information the resulting variable can be expected to contain; users rely on their own interpretations and expectations of definition and precision. "Compilation" problems refer mainly to the fact that, while each data base, like any other research product, is certified to be (more or less) internally consistent and coherent, problems arise when the data from one collection project are combined with data from another source. With these qualifications in mind, it should be no wonder that data collection has progressed so slowly as the process is painstaking. The irony is that these data limitations, so readily identifiable in data quantification and collection efforts are the same as those that plague all knowledge-gathering and social-learning activities. What formal quantification allows is a recognition of and a large measure of control over the inherent biases in data collection; it does not create these biases. The process "cleans" and "distills" our general knowledge base and, by doing so, gives us yet another "look" at empirics and another tool in our arsenal of analytics. It is important to keep in mind that, while the quantification process has enabled great advances in the <u>relative</u> precision of empirics, the <u>absolute</u> precision of political statistics varies greatly. All too often, analysts seem to assume that the translation of political events and characteristics into the language of mathematics lends the "numbers," those assigned to portray or indicate perceived variation in quality, full mathematical precision. Problems of false precision are pervasive in data compilation and rampant in analysis and, so, demand great attention in the construction (and evaluation) of research designs and procedures.

In speaking directly about data development as regards the scientific study of international conflict processes, some general observations can be made. Data accumulation, at present, strongly favors the study of major power politics, in the post-World War II era, under the very constrained and stylized conditions of war as an object or event, not as a process. The conclusion that war is the most important or only problem to be studied does not follow logically from the fact that only war can be studied. War itself is an amorphous concept that subsumes an entire "universe" of information about relations taking place within the general context of war. This is the "human element" that is lost in information that focuses primarily on the strategic or physical elements of war. This is perhaps the most insidious data bias; it appears to make research on war irrelevant to those concerned with the human factors. The empirical fact that the major power war is completely absent

in the contemporary period and interstate war is relatively rare points to the need to shift resources toward the study of those types of armed conflict that still plague human relations. We can not limit ourselves to the study made possible by our data, we must expand our data to study those things we need to understand. The inherent weaknesses of the extant data lead toward the conclusion that we need to more extensively analyze and expand the data available for analysis of conflict interactions rather than continue to more intensively analyze the very limited data we have at hand. We now have the capability to expand analysis to include "minor powers"and 'third world' states, and even some nonstate actors, but this course is rarely pursued.

Despite the wealth of data that we now possess, there is relatively little that is "groomed" and accumulated in archived data bases and there are still but a handful of data sets that enjoy global scope, sufficient temporal range, consistent coverage, and reasonable precision.[21] Global data collection efforts require enormous resources and there are few bodies committed to supporting such efforts. One is the world consortium comprising the United Nations, the World Bank, and the International Monetary Fund; the other is the National Science Foundation (NSF) of the United States (the Inter-University Consortium for Political and Social Research–ICPSR–at the University of Michigan is a central depository for data bases but does not support, direct, regulate, or coordinate such efforts).[22] The mainly demographic and economic data collected by the world consortium is well-known and has recently been made available for mass consumption through the medium of the compact disc (CD). This data is not specifically applicable to the study of conflict processes; it is more complementary to that study. The scientific study of international conflict processes is heavily dependent upon the several data sets comprising the Data Development for International Relations (DDIR) project which has been strongly supported by the NSF. Nearly all studies of international conflict utilize data from DDIR sources in one form or another and the recent, major efforts to upgrade and update the DDIR data has been indispensable to research. This work is only recently being completed and the results are stimulating a new round of conflict analyses. These two primary sources are generally acknowledged as providing the most accurate, reliable, and consistent data on variables related to international conflict processes. An abundance (perhaps an overabundance?) of other data sources exist and are being added and expanded almost continually. Most data sources are extremely limited in scope, some are very difficult to use or comprehend, many are of questionable precision or origin. In short, all data in international relations should be considered "soft" data, or indicators rather than measures, and treated accordingly. An important part of the scientific research process is in learning the special "personality traits" (strengths and weaknesses) of the data used so that analytical interpretations are not ingenuous; self-regulation is absolutely necessary. The only truly "hard" bits of data available are the very fact of the states themselves (191 at last count) and even this fact is problematic as those states are hardly similar or comparable units; ranging in size from the Vatican City State (pop. 811) to the People's Republic of China (pop. 1.192

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[21] For information and access to data resources, including microcomputer download capabilities, the two best sources are the Inter-University Consortium for Political and Social Research at the University of Michigan, Internet address http://www.icpsr.umich.edu/archive1.html, and a private compilation by Paul Hensel, Internet address http://garnet.acns.fsu.edu/~phensel/data.html.

[22] The original formation of the ICPSR was enabled by grant support from the National Science Foundation (1963).

billion) . The question remains as to how much of the wealth, confusion, and contradiction of scientific findings are attributable to data error, data inconsistencies, artifactual puzzles, misspecifications, inappropriate methodologies, misguided theory, or a myriad of other analytical shortcomings.[23] To bracket this discussion somewhat, consider the following comments. As one scholar has confided, "[The availability of data] has made an enormous difference in the ability of IR scholars to look systematically at the causes and consequences of international conflict processes. It realizes the dream of some of us for decades, that if the data were built, so to speak, the scholars and students would come."[24] A more cynical commentator has remarked, "Since one can find statistics to defend virtually any side of any argument, empirical evidence is vitiated by prejudice."[25] And, in the words of another, "Let the user beware."[26]

Micro-computers. Data development is futile without a concomitant development in the means to construct, store, manage, and disseminate data accumulations and calculate statistical analyses. Computer technologies have changed so rapidly it is at once difficult to keep pace with the expanding capabilities and applications and easy to overlook the fact that the microcomputer is a very recent development. In 1970, data records had to be input, collated, and read using manual, mechanical keypunch techniques, severely limiting applications; calculations were often accomplished by hand with only a standard, mechanical calculator to augment precision. Magnetic tape records and mainframe computers greatly increased storage and retrieval capacities and accelerated computational processes but arcane programming and job control languages and time sharing requirements for use of these massive and incredibly expensive contraptions continued to cap applications at a fairly low levels. It was not until the late 1980s that microcomputers made the capability to conduct complex statistical calculations using fairly large data bases available to the general academic community. It has only been since about 1990 that computer processing capabilities have expanded to the point where full data management, including data construction, storage, retrieval, and analysis has become an option for the individual researcher and it has only been in the last two years that microprocessors have been developed that render mainframe computers all but obsolete for the needs of international relations research. The convenience, capability, and ease of use of the microcomputer have made scientific research available to all scholars and have thus quieted many skeptics whose mistrust of such methods was seated more in the inaccessibility of the technology and the uncertainty bred by the "ghost in the machine" than distrust in the facility itself. With the advent of the microcomputer, nearly everyone has discovered some useful application of quantitative methods and computer technologies and resistence has

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[23] For a discussion of "the uses and abuses of political science data, and the rules, if any, the profession should adopt to preserve the integrity of political science research *and* to advance knowledge," see the "Verification/Replication" symposium in the September 1995 issue of *PS: Political Science & Politics* 28:443-499 (quoted from page 443, italics in the original).

[24] Bruce Russett in an email letter to the author, 5 September 1997.

[25] Herbert London, "The Politicization of Social Science Research," *The Social Critic* 2(Summer 1997):35.

[26] From the title of a 1983 article by Charles A. McClelland, "Let the User Beware," *International Studies Quarterly* 27:169-177.

lessened and quieted considerably. There remains serious differences of opinion concerning applications and expectations, but few question the basic viability of the medium. Instead, the unfettered accessibility of the technology has turned the operation of data analysis from one dominated by technical experts, whose analyses had to be well-developed and well-considered so as not to waste a limited and valuable resource, to one available even to the untrained and the complacent. Pressure to "publish or perish" is making statisticians of us all. Theoretic specification is no longer a prerequisite to analysis; generally weak data (and it is all generally weak data) can be forced to confess to any crime. The burden of responsibility and accountability has been foisted to the shoulders of the consumer in lieu of industry standards and self-regulation. Most of us operate largely on faith when it comes to deciphering research procedures and the strength of the results.

Methods. As argued throughout this study, scientism as a research process has stimulated a greater attention to scientific methods and rigor in both theory and research. One area where accessibility is still fairly controlled is in the area of formal methods. Increasingly complex and sophisticated statistical methodologies are probably outstripping the quality of the data being manipulated; they are certainly outstripping the ability of consumers to comprehend the meaning, application, suitability, and validity of such statistical techniques. Researchers have primary responsibility for placing their work in a meaningful context and making it accessible, at least, to the members of the academic community. Usually this can be accomplished simply by translating the research design and results into a common academic language, but too often this is not done and the work remains clouded in exclusivity and obscurity.

Two areas of methodology that have been growing recently are the use of public opinion surveys in countries where, only a few short years ago, public opinion was generally considered irrelevant, either to domestic political processes (e.g., the former socialist countries) or to foreign policy formulation (e.g., the United States). These applications must be considered exploratory until they have established their scientific value; if nothing else, this profound interest in the general public denotes an erosion in the assumed supremacy of the state and its autonomy in formulating foreign policy. The second area of growing methodological interest is in game theory: the mapping of decision making in strategic interactions. The contribution of the metaphors of the "prisoners' dilemma" (in inter-unit relations) and the "tragedy of the commons" (in intra-unit relations) to greater comprehension of complex interactions and in identifying solutions (e.g., communication, iteration, reputation, promising, and "shadow of the future") to the suboptimal outcome of unit interaction in anarchy is unparalleled. Equally impressive has been Axelrod's (1984) demonstration of the strategic superiority of "tit-for tat" and "tit-for-two-tats" in *The Evolution of Cooperation.* Recent experimental tests of game theoretic innovations have confirmed the importance of communication, universal promising, reputation, and optional play in minimizing defections in strategic interactions (see for example Dawes, van de Kragt, and Orbell 1990, Dawes and Orbell 1995, Majeski and Fricks 1995, Ostrom, Gardner, and Walker 1994). Another very recent methodological application that holds great promise for the analysis of complex international processes is chaos theory (see for example Kiel and Elliott 1997); a similar computer-mathematic technique for modeling complex processes (simulation) has already been mentioned (Zinnes and Muncaster 1984). A hybrid methodological approach can be seen in recent attempts to incorporate complexity in social systems analysis (e.g., Jervis 1997).

Information and Communication Networks. A corollary to the revolution in communication and information technologies has been the development of global computer networking via the Internet and the World Wide Web; technological innovation will likely continue to expand the capacity to exchange information and monitor global events, trends, and changes. Couple this capacity at the individual level with the increasing capabilities in surveillance, broadcasting, and communications relays and you begin to realize the potential for complex social networking that will enable rapid recognition and response to just about any unfolding global circumstance. Not only is the free flow of information and technology assured by such networking but the real potential for early warning through informal monitoring systems will make states and nonstate actors alike more accountable for their actions. Atrocity is greatly facilitated by anonymity; publicity strips actors of their veils of nonaccountability.[27]

Communication. As alluded in the discussions above, the technologies of political communication remain some of the least developed areas in international relations research. It is often extremely difficult to comprehend research designs, place research into meaningful context, or connect it to other related or relevant research. Specialized and technical languages and the use of cryptic jargon often prevent access to important information that might enable cross-specialization or inter-disciplinary collaboration and coordination. The inaccessibility of language and conceptual constructions is one of the major obstacles to broader participation by women and minorities in the discipline. The medium of presentation for learning is arcane and is failing to reach, motivate, or stimulate students in the subjects being taught. This is the main failure of political theory and research in an "applied setting." By failing to communicate the real vitality of the subject and its importance, we are failing to recruit supporters and practitioners to implement the knowledge we develop. Instead, we tend to reinforce political cynicism and so prescriptions are rejected or dismissed out of hand or accepted selectively and tenuously.

Contextual Factors

Security at the End of the Cold War. It is difficult to describe, or overemphasize, how important, powerful, and formative the context of the Cold War ideological confrontation between the superpowers has been for the development of international relations, scholarship, and research. The impact of the Cold War is most clearly visible in the concept of "security" and the content of "security studies." In many ways, "security studies" may be viewed as simply a euphemism for the study of international conflict processes, but that study has grown so distorted by a preoccupation with images of power and nuclear annihilation that "security studies" has grown, rather, to be synonymous with military strategic studies. A brief discussion of that topic and the rather lively debate that has ensued concerning the reformulation of the concept of security and the future agenda of "security studies" is very informative of the special influence that the Cold War environment has had on research in international relations in general. In short, it can be said that, "[t]he cold war not only militarized American security policy; it also militarized the study of security" (Baldwin 1995, 125). Singer (1985, 245) has claimed that the "[a]rmed rivalry between East and West so permeates

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[27] See "The Forum" discussion on the viability of a UN early warning system published in the *Mershon International Studies Review* 39 (1995):315-326, for more information on this topic.

and corrupts the underdeveloped societies that neither resources nor infrastructure can be put into place until that rivalry is brought under control." However, "[t]he embarrassing failure of security analysts and practitioners to anticipate–much less predict–the end of the cold war, about which they claimed special expertise, puts security studies in a parlous state" (Kolodziej 1992, 1). It would appear that the Cold War presented an unnatural environment for world politics that contributed to a preoccupation with crisis conditions and militarized responses to conflict, led to major distortions in the development of political structures and priorities, overemphasized military responses to provocations, and infused the scientific study of international conflict processes with such confusion that major, fundamental change in real political processes occurred without anticipation by those specially charged with understanding those processes and monitoring such change. Quite an indictment of the discipline. Johnson and Vasquez (1995, 2) summarize the implications rather succinctly:

> So much of the theorizing and practice of the post-1945 period has been devoted to the role of power and the use of force that it is unclear how other techniques might be employed to manage and resolve problems.

There is no point in belaboring the point of contrast in conceptions of security and the related objectives of differentially defined "security studies."[28] The point is taken that we have stumbled out of the Cold War period with extremely well developed military capabilities and a very refined understanding of instrumental strategies and techniques. At the same time, we have a very underdeveloped understanding of normative and organizational strategies of conflict management and fairly atrophied coordination capabilities, especially as regards the non-European regions of the world (i.e., including the vast majority of world's people and land mass). The systemic logic of the situation seems to dictate that our underdeveloped management capabilities will too often fail to manage and resolve disputes, incremental increases in unresolved conflicts will press toward escalation of hostility in interactions to include justifications of the use of force and violence, and in this climate of increased insecurity and real and amorphous threat, military solutions will loom large, principally because that instrument is so dramatically powerful and "incisive" and there are no comparably reliable, effective, and "incisive" alternatives. That scenario has all the earmarks of a self-fulfilling prophesy.

The end of the Cold War has presented the opportunity to expand our conceptions of what qualifies as security issues and to reformulate the research agenda. That is an extremely important development for it marks the beginning of research over the full spectrum of conflict management strategies and mechanisms; research should no longer be confined to war studies and utilitarian strategies. Indeed, we are witnessing an explosion in innovations to the scientific study of international conflict processes; some of these major research developments are discussed below. (See Haftendorn 1991, Walt 1991, Kolodziej 1992, Baldwin 1995, Lipschutz 1995 for multiple perspectives on security and security studies under post-Cold War conditions.) Symbolic of the shift of security priorities back toward a humanistic standard has been the establishment of the United States Institute of Peace in 1984; this institution has quickly become a focal point in the

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[28] The contrast is very neatly drawn in two articles recently published in the *ISQ*: Walt 1991 and Kolodziej 1992; I invite the reader to consult those works for a more detailed discussion of the topic.

establishment of a more human-oriented research agenda in conflict management and security studies. The National Science Foundation has also recognized and acknowledged the dramatic implications for politics and social science signified by the ending of the the Cold War by its convocation of a conference on democratization and its call for an immediate and substantial research initiative:

> Consequently, much of the world has become a laboratory, allowing social scientists to test hypotheses of great general significance about the dynamics of political, legal, economic, cultural and social systems. Because the social sciences have become mature disciplines so recently, they have never had an opportunity like this for the advancement of scientific theory.[29]

Hegemonic Stability. Even before the end of the Cold War, hegemonic theory was developed to explain political dynamics within the "spheres of influence" claimed by the two regional "hegemons," the US and USSR. Hegemonic stability theory should probably trace its roots to Hobbes in the *Leviathan* but its most articulate, contemporary proponent has been Keohane (1980, 1984). The concept of hegemonic stability focuses on the source of systemic authority (enforcement capacity) and the construction and maintenance of social order (regimes and compliance). This concept too closely resembles imperialism (minus the territorial element) that has been denounced and refuted throughout history by realists (balance of power theory), idealists (liberal democracy), and radicals (social revolution and liberation) alike. In the contemporary period, it has gained some popularity in the United States, for obvious reasons, and almost no where else, for equally obvious reasons. Historical evidence is replete with examples of "benevolent dictators" transforming invariably to "evil despots" and the conventional wisdom has long been that "power corrupts, and absolute power corrupts absolutely." Liberal democracy was originally devised to counter the "hegemonic power" of the monarchy. There is no evidence to support the contention that a hegemon can actually impose rules and enforce social order except in special, isolated instances, when the social order is mainly defined by legitimacy and superior performance (in which case, the existence of a hegemon is mute as significant challenges are non-existent) , or when there is a very powerful, exogenous intimidation factor involved (when challenges to central authority are suppressed in deference to a common, external threat). Hegemonic power is most likely to breed principled and emotive defiance; systemic leadership is a much more complicated dynamic based upon performance and equity.

Military Capabilities. A common theme that runs through the "cold war" variant of scientific research in international conflict processes is the overwhelming influence of military capabilities on the outbreak of militarized disputes and warfare. Contrary to the "cold war" slogan that claims, "If you want peace, prepare for war," those international actors who are best prepared for war are also those who 1) have experienced more war participation and 2) are most likely to participate in militarized disputes. In fact, military capability is such a powerful predictor of militarized disputes

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[29] Quoted from the introduction of the conference report, "Democratization: A Strategic Plan for Global Research on the Transformation and Consolidation of Democracies," accessible on the Internet at http://www.nsf.gov/sbe/sber/sociol/works4.htm.

that it virtually drowns out any other factors (e.g., Marshall and Ramsey 1997). In the studies of military expenditures, the same statistical condition prevails: previous expenditures are far and away the most powerful predictor of future expenditures. War appears to be primarily a consequence of an over-reliance on military statecraft. The main research question, then, is not "what causes war?" it is "what inhibits the resort to force?" Most notable in regard to conventional "war studies" approaches to research has been the difficulty of incorporating "nuclear capabilities" in the analyses (Levy 1989). (See James 1995 for a review of the literature on structural realism and the causes of war; see Looney 1994 for research on military expenditures.)

Deterrence and Interdependence. It comes as no great surprise that both deterrence and interdependence are considered inhibiting factors in the resort to force. The problem is that neither condition consistently inhibits or prevents the resort to force as both are complex conditions that include both conflict inhibiting and conflict promoting factors. (See Zagare 1996 for a discussion of deterrence theory; see McMillan 1997 for a review of the literature concerning interdependence and conflict.)

Regional Integration. Standing contrary to hegemonic stability theory are regional integration processes. Integration theory, very popular in the 1950s and 1960s, clearly died out by the early 1970s; the last major work in this genre was Nye's (1971) *Peace in Parts*. Since the end of the Cold War, regional integration and regional security have gained greater attention, especially in light of the continuing success of the European initiative. Multilateralism appears to be a key inhibiting factor in the resort to force. (See Lake and Morgan 1997 for a recent examination of regional security orders.)

Democratic Peace. One of the most favorable consequences of the end of the Cold War has been the renewed interest in the inhibiting quality of democratic governance and, especially, liberal democracy. Liberal democracy is based in pluralism (a domestic form of multilateralism), societal openness (a mixed form of equity, social mobility, and political communication), and tolerance of diversity (a conditioned inhibition of contention, prejudice, and discrimination). Democracy has been devised specifically as an antidote to the viciousness and vicissitudes that characterize authoritarianism and so it should be no surprise that liberal democracies are less authoritarian (a tautology). What remains to be done is to detail just how this lessening of the resort to force is accomplished and how transitions to democracy can be encouraged and facilitated. One point seems clear: liberal democracies are incredibly complex, intricately networked, and highly institutionalized systems of governance and conflict management that demonstrate superior performance capabilities and work best under conditions of general prosperity. The recent empirical (re)discovery of liberal democratic "pacifism" is testimony to just how deeply affected we have been by the Cold War context; we appear to have grown ignorant of our own foundational values. The end of the Cold War has stimulated an interest in (re)learning democracy as the former-authoritarian polities of the Socialist Bloc sought advice in how to conduct their democratization processes. Democracy and non-violence are clearly symbiotic and this symbiosis is made clear in the fundamental principle of civilian control of the military. The main research question of the democratic peace centers on how to get "there" from "here." (See Hagan 1994 for a review of domestic linkages to war proneness and Chan 1997 for a review of the democratic peace literature.)

Gender Empowerment. Another important consequence of the end of the Cold war has been the raising of the feminine voice so as to be heard over the din of Cold War militarism. Feminist literature in international relations and conflict processes emphasizes the full range of interdependence and interconnectedness in societal system construction, composition, communication, and conduct and its reproduction. Feminist theory argues that the value and disposition (i.e., willingness) to use force and violence can not be contained nor confined to certain uses but tends to diffuse and pervade all social relationships; that is, it is a cultural attribute that is established and maintained by structures that preference and privilege such willingness in society and suppress those values and dispositions that would moderate or inhibit the use and expression of violence and dominance in social relationships. Universal franchise and empowerment are the mechanisms whereby moderation in social policy and equity in social relations are assured and the inhibition of the resort to force is made rational. Only when social forces are fully integrated can the efficacy of non-violence be envisioned and effected. It is not that women are essentially more pacifistic (women perform similarly to men when given traditionally male roles), it is rather that a culture that does not rationalize exclusionary practices in its societal relationships and practices has great difficulty justifying the use of violence to enforce exclusionary or privileging practices (i.e., dominance). The fully integrated and participatory society is more capable of defending itself from aggression and in supporting non-aggression policies but less capable of using aggression against others. (See Tickner 1992, Peterson and Runyan 1993, and Sylvester 1994 for overviews of feminist theory in international relations; see Marshall and Ramsey 1997 for empirical support for the gender empowerment proposition.)

Environmental Degradation and Scarcity. Almost no one is currently engaged in research on the proposed relationship between (impending) resource scarcities, environmental degradation, and international conflict, except Homer-Dixon (1994). Once a major topic in conflict research, scarcity has fallen victim to the globalization dynamic; scarcities can be mitigated through market exchange and technological fixes. Conflict over environmental degradation issues are thought unlikely to escalate to armed conflict; they are more likely to stimulate the establishment of regulatory regimes. This seems to be an issue that is not amenable to quantitative analysis; intuitively, it makes sense but the evidence is either invisible or has not yet been generated. One can point to two recent and well-known examples where scarcities have influenced conflict relationships: water scarcities in the Arab-Israeli conflict and the general threat of oil allocation scarcities in the 1991 Iraqi War. Oil scarcities are the "Achilles' heel" of the advanced industrial economies as that possibility presents their single greatest vulnerability. The Western policy of using force to keep the oil supply routes open is an especially contentious and provocative external interference in regional politics of the Middle East in the minds of many. Research on scarcity as a stimulus to warfare relates well to the "lateral pressure" arguments of Choucri and North (1975) and should not be so easily discounted so quickly after the serious "oil scares" of the 1970s.

Ghetto-ization of the 'Third World'. The final point that should be covered is the rapidly deteriorating conditions that have overtaken large areas of Africa and central Asia and continue to plague areas in Central America. Civil warfare, mass slaughter, and state failure are consuming ever wider territorial tracts in these regions, creating massive humanitarian crises that are beyond our capacity to comprehend, let alone remedy or transform. Interest in these situations is minuscule; willingness to get involved is almost non-existent.

Global Conflict Management. Issues of world order and global governance have been of topical interest throughout the twentieth century but they have gained greater interest as the real possibilities for such an achievement have grown as the world becomes more densely integrated. One peak in this interest can be seen as the formation of the United Nations following World War II. Another peak came with the end of the Cold War and the search for a "new world order." For a glimpse at what a twenty-first century approach to world order and the management of international conflict processes might entail (and for a comprehensive review and treatment of the prospects for implementing a full conflict management system at the global level of aggregation), see Crocker, Hampson, and Aall 1996, *Managing Global Chaos.*

Ideation
Process. The recent change to incorporate process dynamics in conflict studies has been discussed above. This is a very recent innovation that will take at least a decade to be fully realized; it will dramatically change the ways in which research is conducted. It is precedented, however, by a long and abiding interest in systems applications.

Synthesis. The recent trend toward theoretical synthesis remains more an aspiration than a reality; it too will require a decade or more to come to fruition in defining our perspectives on conflict processes. The acceptance of synthesis is a direct corollary to the ending of the ideological war, something we are only just now realizing.

Nexus. Expanding research to examine classifications of social phenomena rather than categories or typologies is still encountering great resistance in the discipline. The inter-state/intra-state divide is one of the sole vestiges of the old order and retains strong symbolic content in stabilizing a research agenda undergoing major upheaval. Expect upwards of twenty years to fully integrate research across political borders.

Convergence? Convergence of perspectives and the development of a unified theory of global conflict management systems requires a de-prioritization of military-instrumental strategies and that can only happen in the absense of major warfare. Democratization therefore defines a practical process whereby normative and associational strategies of conflict management are developed, strengthened, and diffused while instrumental strategies are held in check.

Summation

The mandate for this study speaks of identifying the main research streams and major advances that characterize the scientific study of international conflict processes. The preceding

section reviewed the main journal of the discipline for evidence of new and innovative research streams and major scientific advances but concluded that no new research streams could be identified in the literature. The foundational theories that continue to inform contemporary research are two: realism and idealism, and these two streams have been in evidence since the original formulation of international relations. Even the genesis of the scholarly discipline is difficult to pinpoint without generating controversy. It must suffice to point out that international relations has become a central focus of inquiry in the twentieth century and that the main topic of that inquiry has been interstate war, that quantitative methods have come to inform the discipline in the latter half of the current century, that scientific method has come to guide discourse on international relations only in the past decade, and that we are only now witnessing the beginning of a maturation process in the discipline that may finally produce prescriptive-quality results. Prediction of specific interactive outcomes is problematic in a complex, interactive systems. A sports analogy will best illustrate this difficulty and the resulting tension between prediction and prescription. Games are complex interactive systems based on rule sets and, while the outcome of each individual contest is difficult to predict, the proper conduct that will enhance the possibility of "winning" are knowable, at any point in time, and changeable, over time, as players jockey for relative advantage using a common knowledge pool defined by the rules of the game. Excellence in the "basics" enhances the capability of any player to win the game; innovation may lend a momentary advantage that is fairly quickly lost through knowledge diffusion. The only reliable way to predict outcomes is to "fix" the game, but in so doing the game is destroyed. The best strategy for the long-term is to increase the probability of achievement through superior preparation and performance. We know how to conduct warfare with a very high probability of predicting victory (by ignoring the costs). We are fairly well accomplished in detailing conflict management strategies and processes and have great potential for guiding the formulation of effective public policy and the construction of efficacious societal structures. Unfortunately, we lack the collective will to do so and, so, warfare remains a serious problem in human affairs.[30]

The investigation has pointed out a condition of unequal development between "war (or security) studies" and "peace (or interdependence) studies" that was conditioned (i.e., rationalized) in large part by the pervasive global insecurity that we have come to regard as the Cold War within context of a very peculiar technological development process that has privileged (mainly physical) instrumental knowledge over (mainly psychic) normative and organizational knowledge. The result has been the conscious (re)construction of a (once-failed) global system that is structurally biased toward the reproduction of the dynamics of the former global system with its very highly-developed instrumental (enforcement) capabilities and sorely underdeveloped societal (compliance) capabilities. A social process model was described earlier that summarizes the current situation quite

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[30] This collective unwillingness to construct a common peace can be, at least partially, explained in terms of perspectives on political economy: "Today, even the largest state within the global system is unwilling to become involved in costly conflicts or carry through on costly commitments outside the regional security complexes in which it is embedded." That is, an actor feels it has no compelling incentive to act to create positive security externalities when other actors are the primary beneficiaries of those security conditions. In fact, it may be viewed as being beneficial to actively undermine the security conditions of others; for example, "a politically fragmented Middle East produces the positive *global* externality of cheaper oil." The social engineering of inequality, or discrimination, is probably the main factor in the impetus to use violence in political relations, whether used to create or maintain privilege or to redress or erase grievance. (Quotations are from Lake 1997, 65; italics in the original.)

simply: a crucial shortfall of compliance structures combined with incoherent aesthetic vision will lead to heightened incidence of compliance failures; these failures will over-burden and strain existing associational and institutional remedial dynamics and lead to a higher probability and outbreak of instrumental responses; this imbalance will feed back to stimulate armaments proliferation and undermine and further diminish normative and organizational (integrative) capabilities and, thus, further exacerbate the perceived utility of escalating instrumental responses. At the same time, activity will be stimulated within the system and will continue to increase, creating an illusion of productivity and further complicating system dynamics. In short, neither systemic nor contextual dynamics can be ignored in this scenario without dire consequences. Of course, this is can not be considered a prediction; rather, it serves as a process description of the social system's "basic default option," the Malthusian proposition. The probabilities of alternative outcomes can be altered by choice and policy.

Innovations within the dual research streams are evident as the relevant properties, characteristics, and dynamics of each perspective have been more fully described and detailed even as social dynamics continue to transform, or develop, social relations in important, technical ways. Game theoretic treatments of human interactions have been especially insightful and helpful in formalizing our understandings of interactive outcomes as they focus on the relevant unit of analysis: the human actor. Other mathematical models and computer simulations that use the human actor, rather than the reified state, as the unit or locus of analysis have been successful in recreating the properties of observed realities under experimental conditions. The large amount of attention given to the "democratic peace" proposition recently may also be viewed as a evidence of a shift away from pure statist theory toward human-oriented theory in conflict analysis.

A major breakthrough was identified as the fortuitous end of the Cold War; it is not clear why this major change has transpired nor that its demise needs to be explained. Opposing viewpoints posit at once that the Cold War was "won" by a victorious player whose superior skill, resources, and strategies out-maneuvered its opponent and that the Cold War was simply a vestige of the obsolete order held over during a transition toward a new systemic order and that its end signifies the recovery from the last war, a relaxation in emotive dynamics, and a return to political "normalcy." In either case, the dramatic change in the nature of systemic relations presents an enormous opportunity to advance the scientific study of international conflict processes by taking international relations out of the intellectual straight-jacket imposed by systemic authorities to regulate behavior during the period of prolonged systemic crisis. We have gained "thinking space" as a result; we have the opportunity to regain composure and intellectual balance. We have shifted focus away from maintaining strategic posture and "hegemonic control" to further the construction of a "democratic peace." It is the understanding of the author that the "democratic peace" is not a state of grace that is bestowed upon a superior or privileged subset of the global population of human beings; it is, rather, a euphemism for the superior capacity of complex normative, associational, and instrumental conflict management strategies to enable prosperity without jeopardizing welfare. It is necessarily a coordinated societal system of multiple-level, structured, interactive conflict management dynamics focused on the viability of the human being in social aggregates that are essentially self-organizing and self-regulating entities. Coordination is the key to social learning processes; aethetic vision presents a guiding hand to coordination.

As mentioned above, there has been an enormous amount of activity in the study of international relations phenomena in the United States and especially since the end of the Vietnam

conflict.[31] That watershed event predates the present study but what that experience has done is to drive home the idea that under certain circumstances superior force can not impose nor define victory, short of genocide. Up to the moment of that revelation, deterrent force was understood as the *sine qua non* of international relations. For the "graduate" of international relations in the aftermath of Hiroshima and Nagasaki, the future wasn't defined by the word "plastics," it was defined by the phrase "weapons proliferation." Deterrent force had worked best when it had been applied to populations who had survived the war and resumed their former lives, who were severely traumatized by modern warfare, who knew what they had lost and had yet to lose and so were highly risk adverse. It did not work as well when applied to populations who were still fighting the previous war to end their victimization by modern warfare and the expansionary state; total war still prevailed, still prevails, in large areas of the 'third world.' In those areas, peace (democratic or otherwise) is still not seen as a viable option and the war continues; the threat of death is no deterrent when the threat of life is worse. This ongoing tragedy is a reminder that we have neglected the development of the full range of conflict management tools simply because we held one "stick" that paralyzed the "Pavlovian dog." That "dog" is almost dead; new generations of people in the "zones of peace" who have never suffered war, never been conditioned to cower at the sight of the "stick," the prospect of war, are populating armed villages while fires continue to ignite and burn in the global ghettoes. And we know that we can not stop war by making war, short of genocide. The moral imperative returns to haunt us and we can neither deny nor ignore the challenge. We have to start making sense; the prospects for "justifying" the utility of power for social engineering purposes is too great in the technological age. (See Chorover 1979 for a discussion of the implications of power for behavioral control; see Levy 1989 for a discussion of the unique problems of understanding "war in the nuclear age.")

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[31] See Walt 1991 for a focused description and explanation of the chronology of changes in military-security studies.

Contributions of the National Science Foundation

A general theme has guided the preceding examination of progress in our understanding of international conflict processes: that is, any conception of progress must include clearly articulated elements of both scientism and aesthetics so as to capture the essential quality of a purely human morality. It has been the assumption underlying this treatment that such human morality must necessarily be universalistic, that "all [humans] are created equal" and that human dignity must be promoted and preserved. The general perspective of this treatise has been optimistic of our general prospects but skeptical of our individual intentions. With these qualifications in mind, I would like to turn our attention to an examination of the special contributions made by the National Science Foundation (NSF) to the scientific study of international conflict processes. It would not be an exaggeration to state simply that the NSF has been instrumental in enabling the application of scientific methods of inquiry to international conflict phenomena; in fact, the scientific study of international conflict would have been severely retarded, if not impossible, without generous NSF support. The main contributions of the NSF in regard to international conflict research can be categorized as 1) support for data accumulation; 2) research and training; 3) coordination of research; and 4) guidance of the research enterprise. The time span for the consideration of NSF contributions is constrained, ironically, by a problem of incomplete records. This data limitation divides the basis for assessment into two parts: one part consists of a simple listing of annual NSF awards, listed with only their primary investigator and project title, over the period, 1980-1997; a second part covering the period 1988-1997 is further informed by the availability of full project listings, including a project abstract, for each NSF award.[32] Again, art imitates reality as the two data bases are not fully compatible resources: what constitutes a "case" in each data list is differentially defined. Coinciding with the "information partition" is the time element required for NSF grant project completion and the dissemination of results: earlier projects have been completed and the results have been disseminated, many of the projects in the more recent period are either in progress or awaiting publication. It is beyond the scope of this study to discuss individual projects or to summarize specific findings; the first is necessarily subjective and judgmental, the second is particularly problematic (as discussed above). It must suffice that the funded research contributes to the scientific research process and the common-pool resource of knowledge on the subject; what will be discussed here are the more general and characteristic contributions made and the narrative image constructed from the unique NSF research award roster.

Data Accumulation

The most important contribution made by the National Science Foundation is undoubtedly the support it has given to data accumulation activities and its insistence that all data generated under its auspices be considered a public good and be released to the public domain at the earliest possible moment.[33] As detailed above, the problems of data accumulation at the global level of aggregation

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[32] Award information is accessible from the NSF web site at http://www.nsf.gov.

[33] NSF Grant Policy Manual 95-26 (July 1995) 734.b. "Investigators are expected to share with other researchers, at no more than incremental cost and within a reasonable time, the primary data, samples, physical collections and other supporting materials created or gathered in the course of work under NSF grants. Grantees are expected to encourage and facilitate such sharing." This document can be accessed on the Internet at

are enormous, with start up costs that are prohibitive and beyond the means of most individuals and institutions. Early enthusiasm for data collection efforts as a spur for the behavioral revolution in the 1960s and early 1970s gave way in a shift of general institutional priorities for more localized and practical (i.e., immediate and marketable) results-oriented research. Most data collection efforts languished in the latter 1970s and early 1980s; a few projects continued under unfavorable conditions, severe constraints, and greatly reduced resources, mainly due to the dedication and perseverence of their principal investigators or via adoption by more willing colleagues.

The main thrust of NSF support for data accumulation efforts has come through the Data Development for International Relations (DDIR) program.

The systematic, quantitative study of international and comparative politics has seen dramatic growth in recent years. This explosion in the scientific study of cross-national and international politics has produced and enhanced awareness that datasets are critical for the continuation and further development of these scientific studies. This awareness of the centrality of datasets has been intensified by the developing sophistication of methodology and [computers] which has made such analyses both more feasible and more efficient. The compilation, storage, and retrieval of datasets, however, is costly and requisite funding has not kept pace with the discipline's increasing needs. This realization led a number of researchers...to convene a series of meetings in 1983-84 to study the community's data needs. The consensus that emerged...became the basis for the organization...Data Development for International Research (DDIR).

The reports and discussions...led to the development of a coordinated, inter-university proposal to the National Science Foundation. The [original] proposal...stressed four data needs: filling in and updating major datasets concerning (1) national attributes and (2) international conflict; and..a series of conferences to examine the needs, feasibility, and strategies for constructing (3) events datasets and (4) datasets for use in the field of international political economy....NSF funding obtained for 1986-89 made it possible to pursue all four objectives.

DDIR Phase I consisted of ten distinct projects at seven universities designed to produce critical datasets for items (1) and (2). At this writing nearly all of these datasets are complete and have been submitted for public distribution....
To complete goals (3) and (4), DDIR held several working conferences...[which] led to a second phase in DDIR's research program that sought and [was awarded NSF support in 1991] both (1) to enhance [extant] high-quality event datasets and (2) to develop computer software to facilitate the future generation of such event data and make [the data more accessible to users]. (Merritt et al 1993, 1-2)

The datasets that were enhanced and updated during Phase I of the DDIR project are the several Correlates of War (COW)datasets: Civil Wars 1816-1992, Interstate Wars 1816-1992,

National Material Capabilities 1816-1985, Dyadic Relationships 1816-1992, and Militarized Interstate Disputes 1816-1992; Polity II 1800-1986 (political authority characteristics); Great-Power Wars 1495-1825; Major-Minor Power Wars 1495-1815; International Military Interventions 1946-1988; International Crisis Behavior 1918-1988; and the World Handbook of Social and Political Indicators III 1950-1988. Also included in the Phase I project was an Interstate War Catalog.

The Phase II project develops a mixed strategy for its development of events-data: "(1) begin generating a rich and general core dataset; (2) improve the capabilities of key, existing, specialized event datasets; (3) enhance [computer] software so as to minimize the time and cost of expanding datasets in the future [so they do not require continuing federal support]; and (4) explore the possibilities for new styles of event-data research" (Merritt et al 1993, 7). Phase II concentrates on establishing a core-data collection called the Global Event-Data System (GEDS) as a basis for updating and extending the several specialized event-data projects: Conflict and Peace Data Bank (COPDAB), World Event Interaction Survey (WEIS), Foreign Policy Behaviors of Southeast Asia States (SEAS), Kansas Event-Data Sources for Central Europe and the Middle East (KEDS), the Behavioral Correlates of War (BCOW), and Non-State Actors in International Conflicts (SHERFACS). (See Merritt et al 1993 for detailed discussions of the several Phase II projects in progress.)

The value of the international data sets that are the focus of the DDIR project activities can not be overemphasized. Surveys of data usage in published studies consistently identify the COW, COPDAB, WEIS, and World Handbook datasets among the most highly utilized in scientific research on international politics (e.g., McGowan et al 1988, Gibbs and Singer 1993), going so far as to declare them a "national resource." Yet, the DDIR is only one of the major data accumulation projects supported by the NSF during the target period. Another very extensive effort concerns the accumulation of public opinion survey data collected in the regions of primary interest to the United States' foreign policy: Europe, the former-Soviet Union, and China. The NSF has acted in an informal central coordination role through its generous support for work to enhance the quadrennial Euro-Barometer surveys, for the establishment of extensive "baseline" survey work in the recently opened societies of the former-Soviet Union and China, and the construction of a global data base (World Values Surveys–WVS) combining survey research on mass attitudes in nearly fifty countries covering seventy per cent of the world population. (See Inglehart and Carballo 1997 for a brief description of the WVS project.) Other important data collection projects recently supported by the NSF include data on domestic conflicts in Europe, principal interstate rivalries, and international regimes. Of course, data compilation (on a smaller scale) and utilization remain an integral component in many, if not most, of the research projects supported by the NSF. Also noteworthy in this regard has been the support granted for the development of computer/mechanical data coding techniques in the long-term interest of increasing efficiency in continuing data generation and maintenance activities.

Research and Training

Data accumulation is the foundation of scientific research and, as argued throughout this treatise, its qualities and characteristics determine, in large part, what issues may be studied and how those issues may be studied. The second crucial factor in the scientific research enterprise are, of course, the researchers themselves. The earlier elucidation of the research process relied heavily on the proposition that the "scientific intuition" of the individual researchers provides a crucial

intellectual bridge between the prevalent condition of incomplete information and the totality of existential reality. A crucial assumption in the scientific enterprise is that the human mind (i.e., natural intelligence) can process (and store) far greater, deeper, and denser amounts of information than can be mechanistically encoded in mathematics-based languages; the human mind processes whole sensory images while the computer (i.e., artificial intelligence) can only process partial and derived images.[34] The difference between natural and artificial intelligence is the difference between theoretic explanation and pattern recognition. Computers can neither establish aesthetic meaning nor impart morality to information. The quality and the values of the researchers that populate the research community (and, of course, the quality of the standards by which the qualities of the researcher are assessed) are crucial determining factors in the results obtained during the ongoing social learning and research enterprises. There is no intention here to privilege a certain quality of human intelligence or capability over another; in terms of the foundational values that guide this study, all human qualities are of equal value, whereas the status valuation of differential qualities is determined subjectively according to existential perspective. In the scientific research process, producers, interpreters, synthesizers, and conveyors of knowledge are equally valued and essential components of an integrated system.

An examination of the "human component" of the research process during the study period (1980-1997) can only be tentative, as it is here that the problems of incomplete information are most profound. The listings provided by the NSF most often include only the principal investigator for each project, especially if the project is conducted at a single institution; collaborative projects that involve researchers based at different institutions list a principal for each institution. An obvious bias in this accounting is that the principal listed is most likely the senior and/or the most-respected member of the research team: junior members are under reported.[35] During the study period there are a total of 194 researchers identified as directing NSF-funded projects in five general categories of research relevant to the broad definition of international conflict processes established above: international (armed) conflict and systemic studies, democracy and democratization, foreign policy and decision making, comparative politics and country studies, and international political economy. The first category, international conflict and systemic studies, is characterized by its holistic and systemic (macro-theoretic) scope; the other four categories are international in scope but more specialized in applications.

It is clear from a superficial, and tentative, assessment of the human component that the NSF "recruits" top-notch researchers and often maintains long-term support for particularly productive enterprises. Resources are crucial to the research enterprise and there can be no doubt that the awarding of support by the NSF is one of the most empowering and prestigious actions that may be bestowed upon a social science researcher. The evidence supports the conclusion the NSF most often awards proven researchers rather than being responsible for "making" researchers, although its special (though minor) programs for dissertation improvement, career development, and women and

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[34] A third component of human intelligence might be called "communication intelligence" that is based in semantic or symbolic languages; this third type of intelligence deals in abstract images that are partial representations and recreations of holistic images for exchange purposes.

[35] Difficulties encountered in categorizing projects are assumed to produce non-systematic errors; the fact that there was a single coder imparts "subjective consistency" to the process.

minority researchers are designed to improve and broaden the general "stock" of the research community. NSF researchers are extremely influential members of the scientific community and NSF funding is an extremely important resource, especially in the social sciences where research is costly and immediate and tangible products are rare (and private, non-philanthropic, funding is even more rare). There is really no single objective method for assessing influence, impact, or prestige of either research results or researchers in the social sciences disciplines (in democratic societies). The list of NSF recipients contains the names of both well-known and well-respected scholars and the lesser-known researchers; few patterns emerge. One distinctive pattern, other than the generally high quality of recipients already noted, is the persistence of support for a few researchers who might be considered an elite clientele or research core group. Of the 71 scholars categorized as involved in macroscopic studies related to international conflict and systemic issues, over 40 per cent have been awarded multiple project grants during the study period. In the more specialized project categories, only 15 per cent of the researchers listed have been awarded with multiple project grants.

While it can be said that any project directed by an experienced and proven researcher and empowered with significant resource support will make a substantial contribution to the common pool of scientific knowledge, the precise nature and consequences of those contributions are difficult to assign or assess. As argued above, breakthroughs in social science research, unlike the physical sciences, are almost impossible to identify and attribute accurately. The subject matter is far too complex to be influenced significantly by single factors or incremental changes and ideas are far too abstract and broad to be perfectly unique in their genesis. What is most likely to appear unique is the terminology or the methodology used to describe, define, or analyze concepts and information. Social science is exactly that: a social endeavor, and the products of the social science research process are a community product and common-pool resource. Social science is based in individual subjectivity; objectivity can only be established by pooling and polling the research community itself. What is especially important in this enterprise is the maintenance of the community and the communication among its members.

Social science research is largely a technical enterprise that utilizes increasingly sophisticated instruments and complex resource materials to construct representations of an extremely complicated, common and communal reality. Research grants enable large projects that necessarily involve the practical training of junior research partners as well as the senior research directors. The long-term contributions made by NSF funding to the maintenance and improvement of the research community are both incalculable and invaluable. The intellectual capital and currency generated directly by the individual research enterprise represents but a very small fraction of the total intellectual wealth created. The majority of the intellectual capital created remains embedded in the minds and invested in the development of the actual research participants, a large portion is converted to intellectual currency for language communication with other researchers, scholars, and practitioners, and only a relatively small fraction of the generated capital is encoded as product or commodity for general consumption and submission for analysis by mechanistic methods and artificial intelligence. This last, small, highly formalized information resource, i.e., data accumulation and formal modeling, is an extremely important referent point for synchronizing scientific language, comprehension, and endeavor through the infusion of common, precise, and standardized meanings. The NSF stands a leader in the development of human intelligence and

intellectual capital in a profession that is necessarily and notoriously individualistic, egoistic, and independent.

One area that deserves special attention in regard to this discussion of the development of human intelligence, intellectual capital, and the research community is the status of youth, women, and minorities. The political science discipline (including international studies), along with religion, remain bastions of white male preeminence; that is an empirical observation rather than a value assessment. Its meaning and significance exists primarily in the eye of the beholder. It was noted in the examination of the *ISQ* above that the representation of women as authors of articles in that prestigious journal was very low but improving; the proportions reported were 0.097 over the full time span, 1976-1996, improving from 0.065 in the earlier period to 0.154 in the most recent period. Female recipients of NSF awards in the Political Science Program over the period, 1980-1997, are comparable to the *ISQ* proportions: 0.108 over the full span and improving from 0.076 in the first half to 0.146 in the latter half. As a point of reference, Sarkees and McGlen (1992) report that the proposition of full-time women faculty in Ph.D. granting political science departments with 21 or more faculty (in the U.S.--those usually considered the top research institutions in the academe) stood at 0.096 in 1979, improving to 0.154 in 1990 (Table 7, 62). Clearly, the issue of under representation of women is a consistent, system-wide phenomena. Information on minority representation is not available. The standard rebuttal to gender arguments concerning inherent value biases embedded in research centers on the idea that science is unitary and objective and that all persons see the same results (i.e., the replication/verification standard) or they are not scientific. In this understanding, representational factors are irrelevant to scientific inquiry. Gender arguments focus on perspectives; they argue that it is the questions asked and the goals pursued that form the basis for gender differences in research, not necessarily the methods used in inquiry. It is a question of balance in the research agenda and policy application. Equity is a morality issue and the "scientific rebuttal" should hold constant across morality "lines," that is, scientific inquiry can not be harmed by representational equity, unless women and minorities are genetically less competent in science.

Only one comment can be made with confidence concerning NSF performance in this regard, there are only three senior female researchers among the NSF core group in international studies and two of those are engaged in highly unique research endeavors: Dina Zinnes with formal models of interactive (hostility) systems and Elinor Ostrom with interactive behavior in regard to the use and management of common-pool resources.[36] Two junior female researchers, Karen Rasler and Donna Bahry, have entered the core by association with senior male counterparts and have only recently established independent research programs. Obviously, more can be done, systemically, to correct the representational imbalance in international relations research; responsibility for the imbalance is diffuse and, so, some proactive leadership is required.

Coordination of Research

While its support for the accumulation of data is surely the most important <u>material</u> contribution made by the NSF to the scientific research process in international conflict processes,

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[36] Margaret Hermann is a third senior female member of the NSF research core group; her work in foreign policy decision making is not so readily distinguished from the mainstream.

its coordination function is an equally important organizational contribution. Research in liberal democratic societies is decentralized and individualistic by nature. Coordination of research in the physical and medical sciences gains coordination through organization in the pursuit of tangible, privatizable results and in response to a fairly visible and coherent demand by the consuming public. Research investments tend to pay dividends to private owners who control the intellectual capital created. Social science research most often leads to less obviously tangible results that are deferred and diffuse public goods; as such, this type of research process tends toward underproduction and market failure, except in its most tangible aspect: military security. Military applications resemble private goods and military technologies can be controlled by collusion between producers and the primary consumer in the monopsony established by the Weberian "national security" state, where the state controls a monopoly over both internal and external military means.[37] A conflict of interest is built into the Weberian liberal democratic state where there is a single consumer of military security goods and a structured underproduction of non-military security goods. A security imbalance and security market failure is created that is heavily biased toward the production of military security; the state, which in its Weberian persona is responsible for creating the imbalance through its "monopoly of legitimate coercion," is also made responsible, in its liberal persona, for correcting market failures and, so, for stimulating the production of non-military security. The contextual condition of the Cold War (i.e., the existence of an external military threat, real or imagined) exacerbated the state's security dilemma and provision imbalance by throwing considerable "weight" on the military security arm of the "national security" scale.

As pointed out above, the ending of the Cold War has had profound effects on the global security situation and, especially, on our understanding of security research and production. A return to security "normalcy" has stimulated a shift away from the severe imbalance favoring a purely military definition of security that has existed since the end of World War II. The National Science Foundation, being the main "regulatory agency" for correcting market imperfections in the provision of social science research, should be critically involved in stimulating non-military security research. Also, because the federal state is the main consumer of international security information and policy prescriptions due to its external security primacy, its strategic security interests should serve to guide a coordination function for macro-theoretic research. Under the current structure of incentives, micro-level individualistic research is favored by the "publish or perish" culture of the academe; this incentive structure is further attenuated by severe cut-backs in public funding over the past decade for "non-marketable" social science research. Just about the only private incentive left for macro-theoretical research is the idealism (or egoism) of the researcher and this incentive is only practical for the tenured faculty researcher. Few faculty can professionally "afford" the long-time horizons and major investments required for obtaining results in macro applications of research. As a result, the research pool is flooded with micro, menial, and trivial research that is difficult to compare or

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[37] In a federal system, the state's monopoly over internal coercion is dispersed and decentralized; under "normal" security conditions, this should soften the federal state's conflict of security interests as the federal state takes primary responsibility for external security and the member states retain primary responsibility for internal security. However, under conditions of significant external security threat, internal security is increasingly viewed as a requisite of external security and so tends toward greater centralization. Witness the U.S. governmental crisis during the Vietnam conflict where the organizational and security purviews of the FBI and CIA became confused; this situation was set up, in part, by the intervention of the federal state in internal security matters due to the failure of many states to respond responsibly to the internal security dilemma posed by the civil rights movement.

combine in meaningful and coherent ways. Heightened competition for increasingly scarce status rewards in our increasingly cynical society tends to atomize the research process even further; few scholars are willing to take chances or to stray from the fold; there are strong professional disincentives to provoking criticism by simply "sticking one's neck out" in a new direction. Tenure, like interdependence, has mixed influences on social science research: on the one hand, it enables "academic freedom" as experimental researchers can not be "disbarred" but, on the other hand, it has created a very conservative research community that, collectively, can penalize "deviants" through its control over the communal environment and the conditions and provision of dwindling community resources.

How does the NSF perform in its crucial role as research regulatory agency? The evidence suggests that it has performed this role very well. Its influence in stimulating quality research in the social sciences and, especially, at the macro-level is unquestioned; the exact nature and extent of that influence is difficult to determine. As argued throughout this paper, the provision of military security studies by U.S. researchers has been maintained at very high levels of production over the modern era; the provision of all other forms of non-military security studies has remained undernourished and underdeveloped through the period of Cold War tensions. The provision of studies of internal conflict dynamics has proceeded apace the military security studies mainly because their scope is necessarily micro-scale and this is consistent with extant research incentive structures; the domestic politics of new states during the de-colonization phase that coincided with the Cold War, also, became the focus of international tensions and competition as each "camp" vied for the loyalties of the new (state) constituencies. While military orientations to internal security have been prominent, non-military orientations have been facilitated by traditional democratic and humanistic ideals and the elevation (in the 1970s) of human rights considerations to the global political agenda. The research process in domestic conflict dynamics breaks down, not in its generation of knowledge, but due to a shortage of willingness and resolve in the policy application of that knowledge outside one's own security complex and "national interests." A comparison of studies awarded NSF grants in the 1980s with those of the 1990s reveals some general characteristics and trends in the conflict research coordination function.

In general, the NSF has maintained (or coordinated) a more balanced research agenda covering the full spectrum of the social conflict process than that provided ad hoc by the general research community. In the 1980s, traditional military and (armed) conflict-oriented research was preeminent among NSF grant recipients but non-military studies of cooperation, collective action, and institutions are a very close second in international research. This balance is especially remarkable as cooperation studies received very little attention within the general research community during the 1970s and 1980s. Further compensating the research market imbalance in the 1980s is the NSF's strong support for foreign policy and decision making studies; these studies are unique in that they are mainly (U.S.) national in focus but international in application and they are primarily non-military (politically) oriented. When these studies are included in consideration, non-military studies are awarded by the NSF at about double the number of military studies in the 1980s.

In the 1990s (there are two years less in this sample than the 1980s) there is evidence of a very dramatic shift in NSF research priorities. Awards for conventional military security research applications stand at about half of those funded in the previous decade, whereas non-military approaches garner about the same level of support as in the prior decade (in numbers of studies; monetary figures were not available). Support for foreign policy and decision making studies has

fallen off considerably in the 1990s: from 29 in the 1980s to 10 in the 1990s. Making up for the deficit in this type of non-military research is a dramatic rise in democracy and democratization studies; these climb from almost nothing in the 1980s (7) to 36 so far in the 1990s (these types of studies really soar in 1995 and 1996). Also, very important and related to the recent emphasis on democratization processes are the number of studies awarded in the 1990s that examine the nexus between domestic and international politics; democratic peace studies are based on an assumed internal-external link, in addition, there are several NSF-funded projects examining the nexus directly.[38] Country specific and comparative politics studies receive consistently strong support across the decades with a slight rise in the 1990s; international political economy receives relatively little attention from the NSF Political Science Program during the study period.

What is especially characteristic of the NSF supported international studies are their attention to dynamic processes throughout the study period, 1980-1997. This innovative, process quality clearly differentiates the NSF studies from the general research pool. The list of projects reveals strong support for research on interactive (hostility and rivalry) processes, war and democracy diffusion processes, state-building, escalation dynamics, social change, and domestic conflict dynamics. There is also a distinctively coherent quality to the pool of NSF research; coordination, communication, and information exchange can be inferred from the characteristics of the NSF pool (though this can not be verified given the information at hand). Grants cover research oriented toward all three aspects of the social conflict process (and conflict management strategies) discussed above: ideational, associational, and instrumental (normative, organizational, and utilitarian). In summation, the NSF research program can be seen to cover the full spectrum of international political processes with an orientation toward the relationship among, or "substitutability," of policy options and some sense of responsibility for stimulating public goods research production. The general take on this section is that the image constructed using NSF research is generally more coherent, covers the full "conflict management" strategic spectrum, and is definitely more coordinated/directed than the general research pool. These qualities, taken together, lead to a conclusion that NSF research is more likely to make, or have made, an efficacious contribution to the accumulation and advancement of knowledge on international conflict processes than the general research process. While the issues pursued and the approaches taken in research run fairly consistent across the research pools, the act of review and approval of research proposals by a single organization lends a crucial element of coordination, and the possibility of guidance, to an otherwise haphazard and atomistic research enterprise. The main strength of the NSF Political Science Program's coordination of research is its leadership in promoting and supporting process innovations; its main weakness is evidenced in the lack of attention to research on democratization processes until almost the mid-1990s, the recent emphasis on correcting this research deficit is too late to inform the "third wave" of democratization that has engulfed world politics. The United States, as global champion of democracy, should have been better prepared to lead and instruct the

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[38] It is very difficult to neatly classify large research projects. Some projects examining cross-level linkages are the local/global common pool resource and nesting projects directed by Elinor Ostrom, domestic and international conflict linkages project directed by Will Moore and David Davis, domestic and international sources of alliances and regime preservation directed by Michael Gilligan, domestic and international factors in the persistence of leadership directed by Alastair Smith, and a reexamination of the link between domestic and international conflict directed by Paul Huth.

democratic transformations of the former-socialist countries; instead, we are learning more from these transformations than we are leading in their realization.

Guidance

It would be either disingenuous or naive to assert that a governmental agency has no political agenda, that its organizational interests are negligible, that its "selfless" pursuit of excellence in value-free scientific inquiry is paramount and definitive, that its *raison d'être* is totally objective or "as pure as the driven snow." That image is often what the social sciences claim for themselves but, as argued in the introduction of this study, such an image is a travesty when applied to policy and collective action. Chaos rationalized by nihilism or authoritarianism driven by self-righteousness would necessarily result from such simplistic theoretical "purity." It was argued here that some form of aesthetic and some sense of morality must guide action; it was also argued that, while aesthetics are fundamentally diverse, only a universalizable morality can contribute to the construction of a stable, global peace.

A foundational standard for evaluating research proposals for NSF grant awards must be the prevailing definitions of the United States' national and strategic interests, a perspectival aesthetic and situational morality. In an anarchic, self-help, global aggregation of states, perspectival aesthetics and situational moralities are fused in the national identities of states and the interactive pursuit of diverse national interests and clash of identities combine to produce an impetus to impose unilateral solutions to multilateral issues; and war often results. A democratization of world politics would, by definition, signify the transformation of international relations to global relations, from a preoccupation with international security to a concern with global security, from a culture of war to a culture of peace. An immediate strategic interest of the United States is to stay abreast of the changing political situations in countries that are of particular importance to its general national interests. The NSF Political Science Program has fulfilled this need for narrative descriptions of political events through its support for studies of particular countries and comparative politics. A comparison of awards made in the 1980s with the 1990s represents a distinctive image that reflects the profound and largely unanticipated changes that have marked the end of the Cold War. Studies in this category increased in the 1990s to nearly double that of the 1980s. The subjects of the studies are also revealing in that the 1980s reflect a relative "stability" in political events; studies cover the full spectrum of major actors in world politics. In the 1990s, country studies are concentrated on the new republics of the former-Soviet Union, especially Russia; the countries of east and central Europe, South Africa, and China. What is particularly surprising is that there are no studies of countries in the Middle East in the 1990s.

A crucial question for the scientific study of international conflict processes concerns the structure of social identity, the substance of political morality, and the process(es) of political integration. There is little evidence that the NSF is supporting research on identity politics or political integration processes.[39] There are funded studies using ethnic identity as a conflict variable or examining the behavior of ethnic groups that are challenging state authority (separatism), but apparently nothing that looks specifically at the dynamics of identity generation, politicization, or

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[39] Support for studies of political integration processes has appeared recently, for example, projects directed by George Downs 1996 on "building multilateralism" and Scott Page, John Miller, and Kenneth Kollman 1997 on "decentralization and performance in multi-layered (federal) institutions: U.S. and E.U."

mobilization. Yet there is strong evidence of a recognition of the importance of these essential qualities in three recent, research initiatives supported by the NSF Political Science Program; these initiatives focus on democratization processes (1993), human resources (1994), and informal global networking (1995).

Democratization: A Strategic Plan for Global Research on the Transformation and Consolidation of Democracies. The NSF Political Science Program was instrumental in organizing the conference on democratization that took place in December 1993; a strategic research plan was designed as a result of this meeting and has been endorsed by the NSF. The workshop identified five research areas that deserve special emphasis:

- the role of market transitions;
- the rule of law;
- the global system;
- alternative routes to democracy;
- democratic institutions and processes (including individual and group behavior).

Evidence of the strength of support for this initiative can be found in the dramatic increase in support for research on democracy and democratization processes in 1995 (10) and 1996 (9). This is also comforting evidence that the United States' strategic interests have shifted from their Cold War preoccupation with physical security to a reaffirmation of U.S. exceptionalism in the promotion of democratic values and global leadership. (The complete text of this initiative can be accessed on the Internet at http://nsf.gov/sbe/sber/sociol/works4.htm.)

Investing in Human Resources: A Strategic Plan for the Human Capital Initiative. This conference was convened in March 1994; the initiative calls for implementation of a six part research agenda:

- employing a productive workforce;
- educating for the future;
- fostering successful families;
- building strong neighborhoods;
- reducing disadvantage in a diverse society;
- overcoming poverty and deprivation.

While this initiative is a domestic political plan to bolster the quality of life in the United States, it is especially important for the study of international conflict processes in two regards: 1) it is a research agenda based upon a strong sense of political morality and 2) it is a universalizable program that can serve as a guide to efficacious international policy steeped in democratic principles and the development (and maintenance) of the "good society." Because the initiative focuses on conditions in the United States, it is not directly applicable as a guide to the coordination of research in international studies. It is highly relevant to the study of international conflict processes as it directs attention to a human-orientation for research, the adoption of a universalistic morality to guide research, and a micro-level approach that is completely compatible with, and complementary to, the more macro-level recommendations of the democratization initiative and the revitalization of U.S. exceptionalism. This initiative is directly relevant to the major research project on common-pool resources (CPR) and its local/global linkages, directed by Elinor Ostrom, that has received significant long-term support by the NSF Political Science Program. The CPR research program is arguably the most important, far-reaching, and innovative research agenda established during the

twenty-year period under examination in the present study. (A complete text of this initiative can be accessed on the Internet at http://nsf.gov/sbe/sber/sociol/works1.htm.)

Connecting and Collaborating: Issues for the Sciences. This conference was convened in June 1995 and reflects the increasing interest in expanding communication and collaboration among world scientists by using new computer-based networking capabilities and technologies. The document composed by the participants to this conference stands more as a statement of principles and a recognition of possibilities presented with the expansion of information and communication technological frontiers. What seems most important here is the call for the NSF to take the lead in encouraging change in the prevalent scientific culture of atomized, privatized, and individualized research. (A complete text of this initiative can be accessed on the Internet at http://nsf.gov/sbe/sber/sociol/works2.htm.) Communication and collaboration issues have run contrary to the culture of national security and secrecy that has prevailed at the macro-level during the Cold War and the culture of compartmentalization that has characterized the academe through the same period. Interdisciplinary approaches reinvent scientific inquiry to conform with holistic, processual, and systemic perspectives; communication and collaboration are the keys to re-envisioning macro-theoretical constructs and research enterprises. What is even more significant in this initiative is the potentially profound impact that greater communication and collaboration has been shown to have upon political integration, conflict management, and the politicization of identity. Taken together, the image projected by these three initiatives signals a return to "normalcy" and the proactive support of democratic principles among both the academic and policy communities.

Conclusion

The image drawn in the preceding discussion of the "state of the art" of the scientific study of international conflict processes focuses primarily on the symbiosis between societal development, political conflict, and social learning processes. The image drawn is one of an infinitely complex, multidimensional, dynamical system; there is no sense of a beginning or end, rather, the sense is of perpetual motion. A beginning is unimaginable and an end is inconceivable. With this image in mind, the one substantive variable concerns the quality of human existence. Political conflict is directly concerned with regulating the quality of life and the distribution of goods. The history of human development is the story of the progressive diminution of the resort to violence in human relations; such progress demands strong, proactive policies that privilege non-violent methods of conflict management and resolution and proscribe the uses of force.

One conclusion that can be drawn from the discussions above is that scientific method will not, can not, resolve fundamental differences of perspective; that is, science can not establish "truth" nor can it serve as the "final arbiter" of those differences. What it can do is help us to discover and identify the most efficacious methods for accommodating our differences and resolving our disputes without unnecessarily diminishing our prosperity and quality of life by resorting to force. It has been argued above that the social conflict process is characterized by thresholds. Such thresholds also characterize the political values of individuals and, as regards the use of force, three circumstantial thresholds may be identified: 1) the toleration of violence; 2) the condonation of violence; and 3)

the utilization of violence. The questions one must ask oneself are: "under what specific circumstances will I tolerate, condone, and use violence in human affairs?" It is the aggregate of answers to these questions that determine the actual extent of the uses of violence in the global system; the crossing of any of these thresholds contributes to the ongoing facts of violence.

A "universal law" of politics is that everyone wants peace; this is, in itself, a vacuous statement. No one can operate effectively for long in a constant state of war; even the war-makers prefer a "peace" where they can attain their goals without the overt act of war (or, at least, act with impunity). If no party to a war "volunteers" to stop making war, the war will end anyway as the ability to wage war is a finite condition. War activity is highly consumptive of both human energy, artifacts, and resources. The variance in the predilection for war lies not in human preferences but in human priorities: what "price" is the individual willing to "pay" for peace? The "price" paid for peace is fundamentally a function of the willingness and the faculty of individuals to adapt, adjust, or alter their appetites and behaviors. The "easy out" solution to any social dilemma is to defect; this solution requires no communication, cooperation, or coordination across lines of contention (although it requires greater cooperation and coordination within the identity grouping): the object of defection is to seize control of the process in order to "define the outcome" and capture the distribution of goods: a "decisive" victory. I put the phrase "define the outcome" in quotation marks because the outcome can not be defined in this way; all that is defined are the future terms for reconstructing the damaged social network and infrastructure and reconstituting social relations.

This observation, if I may call it that, points to the real importance of the "democratic peace" proposition: the idea that humans can live both well and peacefully in a social context. I contend that the real dynamism of "democracy" (an essentially contested concept) stems, or emanates, or radiates, from the foundational agreement of individuals not to use force in their relations, under any circumstances, thus "forcing" motivated individuals to seek common solutions and systemic innovations that increase the wealth of common-pool resources, improve the productivity of actions, increase the efficiency of consumption, or intensify the efficaciousness of systemic allocations and applications. Restraint increases necessity and that stimulates innovation and invention. Capitalism contributes by assigning responsibility; democracy regulates capitalist egotism by demanding accountability; openness precludes anonymity. Given the present state of scientific development there is no excuse for making, condoning, or tolerating warfare under any circumstances; warfare continues, however, mainly as a function of selfishness, ignorance, and complacency. For the first time in the history of humankind, the progressive advancement of science has made peace possible. It remains a vital question whether we can generate the collective will to construct it.

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