Regrounding realism: Anarchy, security, and changing material contexts

Daniel H. Deudney

REGROUNDING REALISM:

ANARCHY, SECURITY, AND CHANGING MATERIAL CONTEXTS

DANIEL H. DEUDNEY

THE CONTEMPORARY study of international politics exhibits unprecedented diversity, but there is widespread agreement that the realist tradition remains the most intellectually hegemonic, and that, within realism, anarchy remains the core theoretical variable. In the two decades since Kenneth Waltz refined the "thought" of earlier writers, most notably Hobbes and Rousseau, into the "theory" of neorealism,[1] arguments about how anarchy shapes the politics of international systems have dominated realist international theorizing.[2] Waltz's reformulation has stimulated a large body of neorealist routine science on topics such as polarity, balancing, alliances, the security dilemma, relative versus absolute gains, and grand strategy. It also has evoked a wide array of fundamental attacks from neoliberal institutionalists, constructivists, Marxists, and others. For better or worse, Waltz's neorealist argument has served as the common lodestone of international theory, attracting some while repelling others.

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1. Kenneth N. Waltz, *Man, the State and War: A Theoretical Analysis* (New York: Columbia University Press, 1959); Kenneth N. Waltz, *Theory of International Politics* (Reading, Mass.: Addison-Wesley, 1979); and Kenneth N. Waltz, "Realist Thought and Neorealist Theory," in *The Evolution of Theory in International Relations*, ed. Robert L. Rothstein (Columbia: University of South Carolina Press, 1991), 21–38.

2. For the range of this debate, see Robert O. Keohane, ed., *Neorealism and Its Critics* (New York: Columbia University Press, 1986); Kenneth A. Oye, ed., *Cooperation Under Anarchy* (Princeton: Princeton University Press, 1986); Alexander Wendt, "Anarchy Is What States Make of It," *International Organization* 46, no. 2 (spring 1992): 391–425; Barry Buzan, Charles Jones, and Richard Little, *The Logic of Anarchy* (New York: Columbia University Press, 1993); Robert Powell, "Anarchy in International Relations Theory: The Neorealist-Neoliberal Debate," *International Organization* 48, no. 2 (spring 1994): 313–44; Justin Rosenberg, *The Empire of Civil Society* (London: Verso, 1994); Michael E. Brown et al., eds., *The Perils of Anarchy* (Cambridge: MIT Press, 1995); Hayward Alker, "The Presumption of Anarchy in World Politics," in *Rediscoveries and Reformulations (New York:* Cambridge University Press, 1996); and Brian C. Schmidt, *The Political Discourse of Anarchy: A Disciplinary History of International Relations* (Albany: SUNY Press, 1997).

The debates between the critics and defenders of neorealism have been wide ranging, but they have largely accepted as unproblematic the geopolitical or material variables contained in the third of Waltz's three-tiered formulation (ordering principles, extent of functional differentiation, and distribution of capabilities). In the process of refining thoughts by earlier realists about the "balance of power," Waltz neglected important claims about how material factors—other than distribution—shape political security outcomes. These thoughts are present in the works of realists from Thomas Hobbes and Jean-Jacques Rousseau through E. H. Carr to Hans Morgenthau and John Herz, as well as those of early geopolitical and liberal theorists. Neorealism's status as the most materialist of contemporary theories remains uncontested (except, perhaps, by Marxists), but what is most striking about neorealism's materialism is how truncated and impoverished it is in relation to its predecessors. The fact that the most energetic challengers to neorealism, institutionalists and constructivists, have been concerned with nonmaterial variables such as institutions, norms, identities, and cultures has also served to draw attention away from the limitations of neorealism's materialism.[3]

This article recovers an argument from earlier realist thinkers, an argument on the relationship between nondistributional dimensions of material capability and the security implications of anarchy. The article also develops this neglected argument into a set of social scientific propositions.

ANARCHY, SECURITY AND MATERIAL CONTEXT

THE CENTRAL nondistributional material variable in early realist thinking, appearing implicitly or explicitly in a variety of terminologies, is what I shall refer to, building on the analysis of Barry Buzan, Richard Little and Charles Jones, as *violence interaction capacity*.[4] (For a glossary of terms and definitions, see Table 1). I argue that the capacity to interact violently, to inflict grievous harm, matters in

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3. The most sustained constructivist defense of idealism and attack on materialism is made by Alexander Wendt, *Social Theory of International Politics* (New York: Cambridge University Press, 1999). Wendt claims that realism (as well as rational choice theory) is reductionistically and deterministically materialist. In actuality, all three of the major traditions of international theory and practice (realism, liberalism, Marxism) are ontological hybrids, combining ideational as well as material variables. For critical evaluation of Wendt's sharp idealism-materialism dichotomy, see Robert O. Keohane, "Ideas Part-way Down," *Review of International Studies* 26, no. 1 (March 2000): 125–30. For a defense of ontologically hybrid theorizing, see Daniel H. Deudney, "Geopolitics and Change," in *New Thinking in International Relations Theory,* ed. in Michael W. Doyle and G. John Ikenberry (Boulder: Westview, 1997), 91–123.

4. Buzan, Little, and Jones propose incorporating *interaction capacity* into an expanded structural realist theory. While they offer no explicit definition of interaction capacity, their examples of this phenomenon place heavy emphasis upon geographic and technological capabilities. Their broad conceptualization of this variable is intended to capture a wide range of nonsecurity interaction capacities. My narrow formulation is intended to focus on solely upon security understood as "security from physical violence." Buzan, Little, and Jones, *Logic of Anarchy.*

major ways independently of the distribution of violence capacity among actors. The main parameters of violence interaction capacity are determined by the interplay of unchanging geography and the changing technologies of communication, transportation, and destruction, which, in turn, alter the significance of geography. Despite the obvious importance of geography and technology, and the many analyses of specific geographies and technologies, these material contextual factors are absent in the primary conceptual apparatus of neorealism except as they affect distribution.

To understand the importance of this variable in international politics and theory, consider the simple question: is anarchy compatible with security? Looking at the overall realist tradition, stretching from Thucydides to contemporary social science, the realist answer is clear and simple: it depends. If anarchy characterizes the relations among lone individuals in the Hobbesian "state-of-nature," or among groups within a state or political unit (a situation of civil war), realists hold that anarchy is intrinsically perilous to security. Realists advise and expect anarchy to be replaced with authoritative government (or a "state" in the loose and empty sense of the term).[5] If, however, anarchy characterizes the relations among Rankean "Great Powers" in a Hobbesian "state-of-war" (perhaps moderated by societal elements such as diplomacy, sovereignty, and international law), then anarchy is compatible with security, and realists advise against, seek to prevent, and do not expect the establishment of authoritative supranational government. One half of the realist tradition has unit-level government as its goal, while system-level government is anathema to the other half.[6] Thus, at its most essential level of argumentation, realism is resolutely Janus-faced about the relationship between anarchy and security, viewing it as either the most dire of political predicaments or the most enduring and manageable of situations.

5. Throughout this analysis, I speak of the alternative to anarchy as "authoritative governance," rather than hierarchy, in order to leave open the possibility, explored in republican and liberal theory and practice, that nonhierarchical forms of authoritative governance are possible.

6. In part this bifurcation has been obscured by the narrowing of the earlier realist theories of *politics* (both unit and system) into the neorealist theory of *international politics* (system only). For recent analyses of internal anarchy, see Steven R. David, "Internal War: Causes and Cures," *World Politics* 49, no. 4 (July 1997): 552–76; Kalevi J. Holsti, *The State, War, and the State of War* (New York: Cambridge University Press, 1996); and Stephanie G. Neuman, ed., *International Relations Theory and the Third World* (New York: St. Martin's, 1998).

Table 1

DEFINITION OF KEY TERMS

State of nature (Hobbes)	An anarchy in which the units are vulnerable to sudden death.
State of war (Hobbes)	An anarchy in which the units are *not* vulnerable to sudden death.
Violence proximity	Inverse effective distance; the velocity of violence divided by the size of the terrain. Four variations: *isolated, distant, close,* and *immediate.*
Violence density	The volume of violence divided by the size of territory (terrain inhabited by population). Four variations: *absent, thin, thick,* and *saturated.*
Violence interaction capacity	An aggregate of violence proximity and violence density. Four variations: *absent, weak, strong,* and *intense.*
Presystemic nullarchy	The situation of actors when the capacity to interact violently is absent, making government between them impossible.
Systemic anarchy	A situation without government in which actors have the capacity to interact violently.

This radical bifurcation at the heart of realism thus poses a second central question: why is the absence of government within a unit perilous, but its absence between units tractable? Looking at the realist tradition prior to neorealism, the answer is simple, if not always explicit: it is due to variations in violence interaction capacity. What determines whether an anarchy is compatible with security is, to a first approximation, the variations in the material factor of violence interaction capacity—a factor which Waltz neglected in his refinement of earlier realist thought into neorealist theory.

The importance of this neglected nondistributional dimension of material capability can also be seen in the question of change in world politics, particularly change in the *size* of major states and the *scope* of anarchic state-systems. Many of Waltz's critics have pointed out that neorealism offers little insight into major change in world politics and have looked beyond structural and materialist theory

to ideational factors for sources of such change.[7] Leaving aside his ad hoc arguments about nuclear weapons, Waltz asserts that there has been only one significant change in the five hundred years of modern international politics—the shift from multipolarity to bipolarity that occurred in the first half of the twentieth century.[8] What is striking about this assertion is that it focuses solely on the number of great powers, ignoring a change which earlier realist and geopolitical theorists viewed as epochal, the change from a European great power system to a global great power system. The new system spanned the entire world in intensive military-strategic interaction, and was composed of units roughly an order of magnitude larger than the average European great power.[9]

These questions on change in unit size and system scope return to a variant of the previous question about the relationship between anarchy and authoritative government: why is world political space occupied by state-systems rather than consolidated into one state or empire? Neorealism presupposes that state-systems exist and therefore it seeks to offer insight into the operation of state-systems. It does not ask why and in what contexts they exist, reflecting its roots in the anomalous experience of early modern Europe. In the wider record of political history, persistent state-systems have been relatively rare, as historians point out, and the persistence of a state-system in Europe was exceptional. Comparably sized, populated, and technologically advanced regions in China, India, the Middle East and Russia were consolidated into what early modern Europeans called "universal monarchies."[10]

In addressing these questions my procedure emulates Waltz's strategy: drawing thoughts from earlier realist thinkers and formulating them into propositions of social scientific theory, with rough incomplete testing via strategic illustration. The argument advanced here does not constitute an attack on the accuracy of main neorealist arguments so far as they go, but is rather intended to complement neorealist insights about the operation of anarchic state-systems with an analysis of the presuppositions and limits of anarchic state-systems. The overall goal is to provide an expanded structural-materialist realist theory.[11]

7. John Gerard Ruggie, "Continuity and Transformation in the World Polity: Toward a Neorealist Synthesis," *World Politics* 35, no. 2 (January 1983): 261–85.

8. Waltz, *Theory of International Politics*, 163.

9. If the Second World War had ended in a stalemate, with Nazi Germany and Imperial Japan joining the United States and the Soviet Union as global great powers, the system would have remained multipolar, and there would have been no significant change in five hundred years of modern international politics as measured by Waltz's narrow metric of polarity.

10. For European exceptionalism and crossregional comparisons, see Robert Wesson, *State Systems: International Pluralism, Politics, and Culture* (New York: Free Press, 1979); and William H. McNeill, *The Pursuit of Power: Technology, Armed Force, and Society since A.D. 1000* (Chicago: University of Chicago Press, 1982).

11. Waltz's neorealist argument is also commonly referred to as "structural realism," but is more accurately labelled "structural-materialist realism" because it primarily concerns the interplay between arrangements of political authority (hierarchy versus anarchy) and the material variable of power

The argument proceeds in the next section to situate the argument, and then is divided into two main parts: first, an exegesis of the thoughts of early realists on the relationship between nondistributional material factors and the security viability of anarchy; and second, the construction of a conceptual apparatus and formulation of this argument as a set of social scientific propositions. The first part demonstrates the central role violence interaction capacity plays in determining the security viability of anarchy, states, and state-systems in the arguments of Hobbes, Rousseau, Carr, Herz, and Morgenthau. The second part refines these arguments by rigorously defining violence interaction capacity and specifying variations in it, and then advances a set of structural-materialist propositions about when anarchy is compatible with security and conversely when political consolidation is required for security. The conclusion draws implications of the argument and suggests several avenues for further research.

SITUATING THE ARGUMENT

THE STRENGTH of the realist tradition lies in the great number and diversity of its arguments. As some decline in value, others emerge as more important. Old insights are forgotten, rediscovered, reformulated, refined, relabelled, and even occasionally improved upon.[12] Arguments about the relationship between anarchy, security and material context are logically central to realism, but have been neglected to the point of being forgotten in recent decades. As a first step in recovering and clarifying these arguments, it is useful to situate and distinguish them from other realist arguments in two main ways. My argument that variations in violence interaction capacity determine the security viability of anarchy is a claim of *system* rather than *systemic* or *strategic* theory, and concerns variations in the *composition* rather than *distribution* of material capability.

First, consider system theory and its relationship to systemic and strategic theories (see Table 2). Starting with Robert Gilpin's useful distinction between system and systemic theory,[13] I include a third very traditional cluster of strategic, or war-strategic, theories. Because they differ in the breadth of what they assume,

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distribution, both of which are broadly "structural" in the sense of constraining or limiting actors, but are otherwise quite different.

12. For a trenchant statement on cumulation in recent theory, see Stephen M. Walt, "Rigor or Rigor Mortis? Rational Choice and Security Studies," *International Security* 23, no. 4 (spring 1999): 5–48.

13. Robert Gilpin describes "systems change" as involving "a major change in the character of the international system itself." In contrast, "systemic change" involves a "change within the system rather than a change of the system itself." He also observes that "students of international relations have given little attention to this [system] change" (Gilpin, *War and Change in World Politics* [New York: Cambridge University Press, 1982], 41–43). For additional discussion along these lines, see Hendrik Spruyt, *The Sovereign State and Its Competitors: An Analysis of Systems Change* (Princeton: Princeton University Press, 1995).

problematize, and can explain, these three clusters of realist theory can be usefully referred to as *grades* of realism.[14]

Table 2

THREE GRADES OF REALISM

Grade of realism	Presumes	Problematizes	Limitations
War-strategic	Interstate military competition	Military victory and defeat	Little insight into policy ends or institutional structures
State-systemic	Existence of states and anarchy	Interstate interaction	Cannot distinguish systemic and system change
Security-system	Primacy of security from violence and exogenous material context	States and state-systems/types of security unit and system	Very broad gauge. Only captures basic and infrequent change

Strategic, or war-strategic, realism[15] is the narrowest, but most extensively developed and institutionally embedded, grade of realism.[16] This realism represents the worldview of military leaders and organizations. It assumes the existence of competitive military interaction and its practical aim is success in the art of war. In the great classics of strategic realism, Sun-Tzu, Jomini, and Clausewitz provide a mixture of time- and place-specific practical advice and very abstract observations about the general logic of strategic and competitive interaction. War-strategic realism provides an indispensable, but incomplete, guide to successful statecraft.

14. For other variations in realism, see Roger D. Spegele, "Three Forms of Political Realism," *Political Studies* 35, no. 2 (June 1987): 189–210; Randell L. Schwellwer and David Priess, "A Tale of Two Realisms," *Mershon International Studies Review* 47, supplement no. 1 (May 1997): 1–32; John J. Mearsheimer, "The False Promise of International Institutions," *International Security* 19, no. 3 (winter 1994/95): 5–49; Michael W. Doyle, *Ways of War and Peace* (New York: Norton, 1997), 41–48, 195–201; and Stephen Brooks, "Dueling Realisms," *International Organization* 51, no. 3 (summer 1997): 445–77.

15. Given that the terms "strategic" and "system" have so many different and established meanings, that "systemic" and "system" are so similar, and that it has become customary to refer to the leading systemic theory of neorealism as "system theory," greater precision and clarity can be achieved by referring to strategic theory as "war-strategic theory," systemic theory as "state-systemic theory," and system theory as "security-system theory."

16. Most war-strategic realist discourse and practice is located outside academic international relations theory, and is to be found in military academies, training manuals and organizational codes and procedures, where it is robustly institutionalized.

Because it takes as given the separate units, violent competition, and the goal of victory, this realism is not well-equipped to offer much insight into either the political origins of conflict or to the arrangements that more generally provide security.

In contrast, the middle grade of realist theory—systemic, or state-systemic, realism—assumes that the state has a privileged position in world political life, that violence capabilities are instrumentalities of states, and that interstate anarchy provides the context for state interaction. This realism focuses upon the relative power potentials of states in anarchy, and its most important insights concern state interaction and the dynamics of interstate systems. State-systemic realism is broad and diverse, encompassing most German realpolitik and classical Anglo-American realists, and nearly all contemporary American realists and neorealists.[17]

Finally, the broadest and least developed grade of realism is system, or security-system, theory. This grade of theory only assumes that security from physical violence is a fundamental human need, and that the material world is an exogenous context for the pursuit of security. Variations in systems are more fundamental, subject to less frequent change, and much less theorized, than are variations within state-systems. There is no generally accepted list of system attributes, but *system structure* and *unit-type* are widely accepted.[18] A third attribute, *system scope*, is also of such elemental importance that it warrants inclusion. The materialist version of security-system realism argues that the number and features of viable protection units are shaped by the contours of the material possibilities for destruction and protection. States and state-systems are historically limited forms of political life that are sometimes at variance with the tendencies of power and the requirements of survival. States and state-systems are political arrangements that function—or fail to function—in providing security. Whether they provide security depends upon their fit—or misfit—with material contexts which change in major ways. Unlike the grades of realism that presuppose the state or particular types of interstate political relations, this realism attempts to provide a system generative

17. Contemporary state-systemic realists are further differentiated into the simple systemic structural realism of Waltz and his followers; the hegemonic systemic structural realism of Gilpin and his followers; the modified or societal systemic structural realism of Hedley Bull and the English School; the unit-level statist realism of "neoclassical realism"; the revisionist states arguments of "offensive realism"; and the "fine-grained" neorealism of "offense-defense theory." In addition to the previously cited works of Waltz and Gilpin, key texts include Hedley Bull, *The Anarchical Society* (New York: Columbia University Press, 1977); Jack Snyder, *Myths of Empire: Domestic Politics and International Ambition* (Ithaca: Cornell University Press, 1991); Randell L. Schweller, *Deadly Imbalances: Tripolarity and Hitler's Strategy of World Conquest* (New York: Columbia University Press, 1998); and Stephen Van Evera, *Causes of War: Power and the Roots of Conflict* (Ithaca: Cornell University Press, 1999). The extensive role of factors such as legitimacy, norms, ideology, leadership, and perception in these theories further belies the constructivist equation of realism and materialism.

18. The topic of unit-type in system theory has been woefully neglected, with the exception of Spruyt, *The Sovereign State*.

logic of protection providing units and systems.[19] As such, it provides comparatively little insight into the routine interaction of such units within such systems.[20]

The conceptual relationship among the three grades of realism is complementary, but hierarchical. Security-system realism problematizes what the state-systemic must presume; and state-systemic realism problematizes what war-strategic realism must presume. The less general grades of realism cannot be deductively generated from the more general, and each has an integrity of its own. The notion of hierarchy is a centerpiece of the statist argument voiced by many realists, from Karl von Clausewitz to Robert Jervis: war-strategic realism should remain subordinate to state-systemic realism because strategy exists as a means to the ends set by state policy.[21] In a similar manner, security-system realism claims superordinate status over state-systemic realism. Security-system realist arguments are rarely of practical relevance, due to the infrequency with which radically different material contexts (and the consequent need to generate fundamentally new forms of security-providing institutions) arise. Thus, security-system realism is practically relevant only episodically; but when relevant it reveals a few simple, but fundamental, truths.

The second key distinction needed to situate my argument about the relationship between anarchy, security and material context is one between the *distribution* and *composition* of material capabilities. Distribution of capabilities refers to relative quantitative levels of capability, and this material variable has been exhaustively analyzed by realist theorists.

19. Neorealist arguments about socialization and competition are often referred to as generative, but are more appropriately thought of as *reproduction* processes of anarchical state-systems. See João Resende-Santos, "Anarchy and the Emulation of Military Systems: Military Organization and Technology in South America, 1870–1914," *Security Studies* 5, no. 3 (spring 1995): 193–260; and Emily O. Goldman and Richard B. Andres, "Systemic Effects of Military Innovation and Diffusion," *Security Studies* 8, no. 4 (summer 1999): 79–125.

20. Thus, the labels "international" and "interstate" are partially misnomers for security-system realism, because it primarily concerns the relations between security-providing orders and underlying material realities.

21. The theme of the supremacy of state purpose over military instrumentalities is emphasized often as Clausewitz's most enduring contribution. See Raymond Aron, *Clausewitz: Philosopher of War* (New York: Routledge, Kegan Paul, 1983); Peter Paret, *Clausewitz and the State* (New York: Oxford University Press, 1976); and Michael Howard, *Clausewitz* (New York: Oxford University Press, 1983). The conflict between state-systemic and war-strategic realism is rooted in the chronic tension between the dictates of state policy and the specialized arts and organs of warfare.

Table 3

EXAMPLES OF MATERIALIST ARGUMENTS AND THEORIES IN REALISM

MATERIAL FACTORS

Grades of realism	Distribution	Composition
War-strategic	Larger armies prevail over smaller armies	Terrain and quality of weapons shape battle/ war outcomes
State-systemic	Balance-of-power theory	Offense-defense theory
Security-system	Extreme concentration of power leads to replacement of anarchy with hierarchy	Intensity of violence inter-action capacity determines Security viability of anarchy

Violence capabilities vary compositionally in several important ways, but violence interaction capacity is probably the most important. Beyond this, the most analyzed compositional variations concern fungibility, present from the beginning of Western materialist security theorizing in land-sea differences.[22] These variations in the composition of power occur when particular power assets have built-in strengths and weaknesses that shape political outcomes independently of their distribution. This entails a "tool box" image of power assets. Just as tools like hammers, saws, and screw drivers vary in their ability to perform different tasks, so, too, power assets have various strengths and weaknesses shaping the tasks they can perform. In contrast, most contemporary realist international relations theorists commonly employ a "money pile" image of power composition.

All three grades of realist theory examine both distributional and compositional material variables, although the analysis of composition has been less complete, especially for system theory (see Table 3). In war-strategic theories, distributional arguments concern relative sizes of military forces, and compositional arguments

22. For recent discussions of fungibility and incommensurability of power assets, see David A. Baldwin, "Money and Power," *Journal of Politics* 33, no. 3 (August 1971): 578–614; "Interdependence and Power: A Conceptual Analysis," *International Organization* 34, no. 4 (autumn 1980): 495–504; and *Paradoxes of Power* (New York: Basil Blackwell, 1989). Also see Robert J. Art, "American Foreign Policy and the Fungibility of Force," *Security Studies* 5, no. 4 (summer 1996): 7–42; and the exchange between Art and Baldwin (David A. Baldwin, "Force, Fungibility, and Foreign Policy," *Security Studies* 8, no. 4 [summer 1999]: 174–84; and Robert J. Art, "Force and Fungibility Reconsidered," *Security Studies* 8, no. 4 [summer 1999]: 184–90).

concern the effects of terrain and weapon quality. In state-systemic theories, most notably balance-of-power and hegemonic stability theories, variations in the relative power of states shape political outcomes. After a long period of neglect, compositional material variables have reappeared in state-systemic theories as "offense-defense" theories, which Stephen van Evera usefully refers to as "fine-grained" neorealism.[23] Both distributional and compositional variables also play a major role in security-system theory. The argument that extreme concentrations of power lead to the replacement of anarchy with hierarchy is an obvious example of security-system distributional theory. Finally, the central concern of this article—the relationship between the material variable of violence interaction capacity and the security viability of anarchy—is an example of a compositional material security-system argument.

STATES, STATES-OF-NATURE, AND STATES-OF-WAR

THE TERM "realpolitik" was not coined until the middle of the nineteenth century, and contemporary realists disagree about many important issues. The contemporary intellectual hegemony of realism is bolstered by realism's very strong self-consciousness as a tradition of theory and practice, stretching back to Greek antiquity and encompassing a constellation of major stars in Western political thought.[24] Many of the key figures acclaimed by contemporary realists for their tradition fit in only awkwardly,[25] and there is no agreed-upon list of members, but Hobbes, Rousseau, Carr, Herz, and Morgenthau are firmly established as realist luminaries.

These five realists are particularly interesting because each of them analyzed, not simply the operation of anarchic state-systems, but also the role of material factors in the formation and collapse of state-systems. These thinkers work in different

23. Key works include George H. Quester, *Offense and Defense in the International System* (New York: Wiley, 1977); Robert Jervis, "Cooperation under the Security Dilemma," *World Politics* 30, no. 2 (January 1978): 167–214; Jack S. Levy, "The Offensive/Defensive Balance of Military Technology: A Theoretical and Historical Analysis," *International Studies Quarterly* 28, no. 2 (June 1984): 219–38; Ted Hopf, "Polarity, the Offense-Defense Balance and War," *American Political Science Review* 85, no. 2 (June 1991): 475–93; Sean M. Lynn-Jones, "Offense-Defense Theory and Its Critics," *Security Studies* 4, no. 4 (summer 1995): 660–91; Chaim Kaufman and Charles L. Glaser, "What Is the Offense-Defense Balance and How Can We Measure It?" *International Security* 22, no. 4 (spring 1998): 44–82; and Van Evera, *Causes of War*, 7–11.

24. For extended analyses of earlier thinkers and the range of their argumentation, see Robert G. Gilpin, "The Richness of the Tradition of Political Realism," *International Organization* 38, no. 2 (spring 1984): 287–304; Benjamin Frankel, ed., *Roots of Realism* (London: Frank Cass, 1996); Doyle, *Ways of War and Peace*, 41–201; and David Boucher, *Political Theories of International Relations* (New York: Oxford University Press, 1998), 47–167.

25. For an extended discussion of the problems in constructing realism as a tradition, see R. B. J. Walker, *Inside/Outside: International Relations as Political Theory* (New York: Cambridge University Press, 1992).

conceptual idioms and the historical generality of their arguments varied, but each advanced an argument, sometimes explicitly, about the role of nondistributional material factors in determining the compatibility of anarchy with security. This line of argument has been largely misunderstood, neglected, or ignored in the secondary literature on these thinkers.

MATERIAL CONTEXT IN STATE-OF-NATURE ARGUMENTS

Hobbes and Rousseau are regarded as seminal thinkers in the realist analysis of anarchy, but both used the conceptual device of the "state-of-nature" in order to make deductive and ahistorical claims in a form alien to modern social science. The typical state-of-nature argument is a mixture of three different types of claims: historical anthropologies of the genesis of civilization, conceptual devices for explicating recurrent and fundamental logics of all human association, and arguments about how different security-providing institutions are formed to compensate for specific configurations of material realities.[26] The first of these have been superseded by more systematic archeological and anthropological investigations and are thus mainly of interest to intellectual historians. The second continues vigorously among contemporary political theorists and is the forerunner of formal "choice theoretic" analysis. The third ingredient is essentially geopolitical and has been almost totally neglected.

At first glance, state-of-nature arguments seem to aim to purge themselves of the mere contingency of "nature" (in the sense of material context) in order to ascertain a universal of human association. In actuality, nature often plays a pivotal but under-recognized role. In Hobbes' state-of-nature, for example, the natural fact that men must sleep, and therefore are vulnerable no matter what their strength, motivates the departure from the state-of-nature and entry into civil society. Deductive contract theorists rarely provide an explicit or systemic justification for which particular facts of nature are injected into their models, and the actual role of these facts in the argument is typically far more extensive than the effort made to justify them. Assumptions about nature as material context play a role in state-of-nature theories much like the pea in the Brothers Grimm story of the "Princess and the Pea": no matter how many layers of mattresses are piled upon the pea, the princess awakens with bruises, and no matter how many layers of intervening deductive argument separate the arbitrarily chosen natural fact from the argument's conclusion, the assumptions about nature leave their strong imprint. Nature, far from disappearing, holds in thrall the entire state-of-nature argument.

26. For recent analyses, see Richard Tuck, *Natural Rights Theories: Their Origin and Development* (New York: Cambridge University Press, 1979); Anthony Pagden, ed., *The Languages of Political Theory in Early-Modern Europe* (New York: Cambridge University Press, 1987); and Asher Horowitz, *Rousseau, Nature and History* (Toronto: University of Toronto Press, 1992).

State-of-nature arguments may thus be read as abstract and somewhat cryptic structural-materialist analyses in which the "state" is formed to solve predicaments posed by "nature." The formation of the civil state is a compensation for naturally existent threats and vulnerabilities. Political order formed to escape from the state-of-nature is shaped by those features of the state-of-nature from which escape is sought. Thus, the natural facts a theorist uses to define the state-of-nature determine, in a compensatory fashion, the particular structures of the civil state: vary the natural facts injected into the model and the outcomes change.

HOBBES ON ANARCHY AND SECURITY

Building on Thucydides, Thomas Hobbes formulated the classic realist account of the relationship between anarchy, security, and political order. Hobbes's premise is that corporeal security is a primary human need, and "Hobbes' great aim is to show men the way to security."[27] Only a handful of passages in Hobbes's work address these issues, and they are embedded in a grand philosophical system that is both odd and archaic, but Hobbes's ideas have been widely influential among international relations theorists.[28]

Hobbes's central contributions to state and interstate theory are encapsulated in his tersely drawn concepts of the state-of-nature, the sovereign, and the state-of-war[29] (see Figure 1). Life in the state-of-nature is "solitary, poor, nasty, brutish and short."[30] In the state-of-nature man is his own master, but life is insecure because even the strongest man can be easily killed by another when asleep.[31] This vulnerability induces individuals to trade their absolute freedom for a minimum of security, provided by the "sovereign." In contrast, the state-of-war (not to be

27. David Gauthier, "Hobbes and International Relations," appendix to *The Logic of Leviathan* (Oxford: Clarendon Press, 1969), 207.

28. Robert J. Vincent, "The Hobbesian Tradition in Twentieth Century International Thought," *Millennium* 10, no. 2.; Donald W. Hanson, "Hobbes's 'Highway to Peace'," *International Organization* 38, no. 2 (spring 1984): 329–54; Mark Heller, "The Use and Abuse of Hobbes: The State of Nature in International Relations," *Polity* 13, no. 1 (fall 1980): 21–32; and Michael C. Williams, "Hobbes and International Relations: A Reconsideration," *International Organization* 50, no. 2 (spring 1996): 213–36.

29. Hobbes's argument actually posits four stages rather than three, with small groups forming in the state-of-nature prior to the emergence of the sovereign and the civil state. For discussion, see Murray Forsyth, "Thomas Hobbes and the External Relations of States," *British Journal of International Studies* 5, no. 3 (October 1979): 196–209; and David Boucher, chap. 7, "Inter-Community and International Relations in the Political Philosophy of Hobbes," *The Political Theory of International Relations* (New York: Oxford University Press, 1998), 145–67.

30. Thomas Hobbes, *Leviathan*, pt. 1, chap. 13, ed. Michael Oakeshott (New York: Basil Blackwell, 1960), 82.

31. "Nature hath made men so equal, in the faculties of body and mind...the weakest has strength enough to kill the strongest" (Hobbes, *Leviathan*, pt. 1, chap. 13, 80).

confused with actual war)[32] exists between separate sovereigns.[33] Both the state-of-nature and the state-of-war are characterized as "nasty and brutish." Unlike individuals in the state-of-nature, however, sovereigns in the state-of-war are not subject to sudden death at each other's hands: they are in an anarchy vis-à-vis one another, but are not so vulnerable. With their survival more assured than the atomized individual in the state-of-nature, the sovereigns in the state-of-war need not submit themselves to an even greater sovereign.

Figure 1

Anarchic state-of-nature   Sovereign state order   Anarchic state-of-war
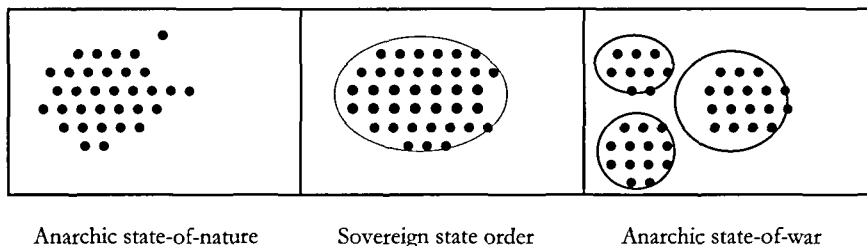
Hobbes's argument has been subject to two radically opposed interpretations, both of which are incorrect. The dominant view among realist students of international relations is that Hobbes's state-of-nature and the interstate system are alike and that international life is *always* a state-of-nature.[34] A second interpretation holds that Hobbes's state-of-nature is *never* like interstate life because states are able to secure themselves in ways that individual human beings cannot.[35] Both interpretations are incorrect from overstatement. Hobbes provides criteria for assessing the security viability of different political arrangements, but the two

32. "The nature of warre, consisteth, not in actual fighting; but in the known disposition thereto, during all the time there is no assurance to the contrary" (Hobbes, *Leviathan*, chap. 13, 82).

33. "[I]n all times Kings, and Persons of Soveraigne authority, because of their Independency, are in continual jealousies, and in the state and posture of Gladiators; having their weapons pointing, and their eyes fixed on one another; that is, their Forts, Garrisons, and Guns, upon the Frontiers of their Kingdomes; and continual Spyes upon their neighbors; which is a posture of warre" (Hobbes, *Leviathan*, 83).

34. Robert W. Tucker cites Hobbes and speaks of states living "...in the state of nature from which they have never emerged" (*The Nuclear Debate: Deterrence and the Loss of Faith* [New York: Holmes & Meier, 1986], 20); Martin Wight notes "...the identification of international politics with the precontractual state of nature?[an] identification apparently first made by Hobbes" ("Why is there no International Theory?" in Herbert Butterfield and Martin Wight eds., *Diplomatic Investigations* [London: Allen & Unwin, 1966], 30).

35. "An armed attack by one state upon another has not brought with it a prospect comparable to the killing of one individual by another. For one man's death may be brought about suddenly in a single act; and once it has occurred it cannot be undone" (Hedley Bull, *The Anarchical Society* [New York: Columbia University Press, 1977], 49).

erroneous readings make an unwarranted leap from Hobbes's ahistorical criteria to universal historical generalizations.

The key to Hobbes's argument is the realization that both his state-of-nature and state-of-war are ahistorical categories rather than propositions about actual historical entities. Hobbes never declares a particular type of regime to be a state, and he never says how big or how inclusive a sovereign must be in order to be out of the state-of-nature.[36] Thus one can only ascertain whether a system with entities of X size with Y capabilities are or are not in an Hobbesian state-of-nature after those sizes and capabilities are measured against the standards Hobbes sets forth: is their life precarious, and is this precariousness generally shared? Whether entities claiming to be states can preserve themselves by their own efforts, or whether they must band together as individuals in the state-of-nature are driven to do, cannot be determined once and for all. The most one can conclude on the basis of Hobbes's categories is that sometimes interstate anarchical systems are like his description of the state-of-nature, and sometimes not. When the relationship between the sovereigns becomes like that of individuals, then the logic of Hobbes's argument points inexorably toward the establishment of a more encompassing sovereign. Hobbes's argument thus raises a crucial question which he does not address: why are particular sovereigns merely in a state-of-war and not in a state-of-nature vis-à-vis one another? Stated differently, how large must a Hobbesian sovereign be in order effectively to leave the state-of-nature? The answer to this question is outside the logic of Hobbes's model, and implicitly assigned to contingent nature (in the sense of material context).

ROUSSEAU ON THE EUROPEAN STATES SYSTEM

The second major early modern source for neorealist thinking about anarchy are three short unfinished and unpublished essays by Jean-Jacques Rousseau.[37] In these small pieces of Rousseau's complex and sprawling corpus Waltz finds the key ideas that make the third image. He also finds in them arguments about why the anarchic interstate state-of-war is simultaneously undesirable, difficult to overcome, and an independent cause of conflict among states.[38] Waltz, however, neglects an

36. Hobbes, however, does say "It is therefore necessary, to [sic] the end security sought for may be obtained, that the number of them who conspire in a mutual assistance be so great, that the accession of some few to the enemy's party may not prove to them a matter of moment sufficient to assure the victory" (*De Cive*, trans. Hobbes, in *Man and Citizen*, ed. Bernard Gert [New York: Doubleday, 1972], 167).

37. Jean-Jacques Rousseau, "The State of War," "Summary of Saint-Pierre's Project for Perpetual Peace," "Critique of Saint-Pierre's Project for Perpetual Peace," in Grace Roosevelt, *Reading Rousseau in the Nuclear Age* (Philadelphia: Temple University Press, 1990), 185–229.

38. Waltz, *Man, the State and War*. For other readings of Rousseau's theory of international politics, see Stanley Hoffmann, "Rousseau on War and Peace," in *Rousseau on International Relations*, ed. Stanley Hoffmann and David Fidler (Oxford: Clarendon Press, 1991); Doyle, *Ways of War and Peace*, chap. 4

important material contextual factor in Rousseau's argument. This variable was implicitly a major driver of Hobbes's main argument, but a variant of it—topographical fragmentation—appears much more explicitly in Rousseau. In part this greater specificity results from the fact that Rousseau, unlike Hobbes, was analyzing a specific historical state-system—the modern European Westphalian—as well as making general arguments about the anarchic state-of-war. Rousseau thus provides an argument explaining why this state-system exists in the first place, as well as why this state-system has political characteristics rooted in its anarchical structure.

Rousseau's analysis of European political arrangements incorporates many diverse variables (culture, religion, commerce, domestic regime type, and geography). In important ways Europe is a society owing to its common history, religion, culture, and commerce. Its parts are independent and diverse, but its extensive network of navigable rivers and maritime access provides for extensive interunit flows of ideas, people, and goods. The structure of this society is anarchical, lacking common general authority, and thus Europe is in a state-of-war where uneasy peace alternates with war.

This disorderly order, Europe's "general constitution," exists and persists for three reasons: topographical divisions, rough equality among several of the major units, and balance-of-power practices. In a characteristically compressed passage, Rousseau observes that "the location of the mountains, the seas, the rivers, which serve as borders to the nations that inhabit Europe, seems to have determined their *numbers* and *size*." As a result, "the political order in this part of the world is, in certain respects, the work of nature."[39] In pointing to Europe's fragmented topography to explain the number of European states, Rousseau holds that Europe, despite its cultural and social unity, is a plural political order because its material context is divided. Second, Rousseau points to material context as the basic cause of the relatively equal size of the major states, and thus attributes the balance of power (in the sense of a rough equality in size) to the material context. Rousseau emphasizes that the number of states and their rough balance make it practically impossible for an "ambitious prince" to subdue the whole of Europe. In pointing to material context to explain why Europe is a plural order with parts in rough equality, Rousseau is not breaking new ground, but merely repeating the conventional wisdom of Enlightenment political science as expounded by Montesquieu's *Spirit of the Laws*, and echoed by numerous other writers.[40] Third,

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"Constitutionalism: Rousseau," 137–60; Roosevelt, *Reading Rousseau in the Nuclear Age*; and Michael C. Williams, "Rousseau, Realism and Realpolitik," *Millennium* 18, no. 2 (summer 1989): 185–203.

    39. Rousseau, "Summary," in Roosevelt, *Reading Rousseau*, 205 (emphasis added).

    40. Montesquieu, *The Spirit of the Laws*, ed. Anne Cohler, Basia Miller, and Harold Stone (1748; new trans., New York: Cambridge University Press, 1987), bk. 18, chap. 6, 278–79. For an extended analysis of the political implications topographic fragmentation interacting with the logistics of gunpowder

and last in importance, Europe remains plural and anarchic because of the prevalence of balancing practices: states are vigilant about capacities and intentions of other states, prepared to enter into countervailing alliances, and similar in military "discipline."[41]

E . H. CARR ON THE COLLAPSE OF THE EUROPEAN STATE-SYSTEM

Writing before the industrial revolution, Hobbes and Rousseau did not incorporate technology as a dynamic variable in their understanding of the material context. By the late nineteenth century, however, the combined impact of the industrial technologies of the railroad, the steamship, telegraphy, and chemical high explosives was widely viewed as creating a new material environment with far-reaching implications not only for the balance or distribution of power among states, but also for the viability and scope of anarchic state-systems. Martin Wight claimed that there was no international theory, and E. H. Carr argued that international theory had been dominated by idealism, but the most extensive body of late nineteenth- and early twentieth-century international theory was the highly materialistic geopolitics of figures such as Friedrich Ratzel, John Seeley, Alfred Thayer Mahan, Halford Mackinder, H. G. Wells, Karl Haushofer, and many others.[42] These figures disagreed about much, but they all assumed that the dynamics of security politics would henceforth be played out on a global scale by actors such as the United States and Russia, which dwarfed the older European great powers, and that the European state-system would be consolidated.[43]

One need not look for such arguments outside the main branches of realism in the idiosyncratic and theoretically diverse geopolitical literature, for it also appears forcefully in the work of E. H. Carr, a widely hailed father of modern realism.[44] As

weapons that was much admired by subsequent German geopoliticans, see Dietrich von Bulow, *The Spirit of the Modern System of War* (London: C. Mercier, 1806).

41. Rousseau, "Summary," in Roosevelt, *Reading Rousseau*, 205.

42. For overviews, see Geoffrey Parker, *Western Geopolitical Thought in the Twentieth Century* (New York: St. Martin's, 1985); Peter J. Taylor, ed., *Political Geography in the Twentieth Century* (New York: Belhaven, 1993), 31–62; and James E. Dougherty and Robert L. Pfaltzgraff Jr., chap. 2, "Environmental Theories," in James E. Dougherty and Robert L. Pfaltzgraff Jr., *Contending Theories of International Relations* (New York: Harper & Row, 1981), 54–84.

43. Anticipations of the obsolescence of the European nation-states were ubiquitous from the middle of the nineteenth century through the end of the Second World War. For the most influential British statement, see J. R. Seeley, *The Expansion of England* (1884; reprint, Chicago: University of Chicago Press, 1971), and discussion in: Daniel Deudney, "Greater Britain or Greater Synthesis? Seeley, Mackinder and Wells on Britain in the Global Industrial Era," *Review of International Studies* (forthcoming, 2001). For an overview of German versions of this argument, see Ludwig Dehio, *German and World Politics in the Twentieth Century* (New York: Knopf, 1960). For perhaps the most starkly realist version of this argument, see James Burnham, *The Managerial Revolution* (New York: John Day, 1941). This argument, frequently appearing in the writings and speeches of Adolf Hitler, is commonly interpreted by neorealist analysts as a "misperception."

44. For Carr's influence, see William T. R. Fox, *The American Study of International Relations* (Columbia: University of South Carolina, Institute of International Studies, 1968); and William T. R. Fox, "E. H.

a proponent of appeasing Hitler and an admirer of Soviet Russia, the Carr that has canonical status in American realism has been quite selective. Beyond these political indiscretions, however, a major part of Carr's realist theory of world politics has been almost completely ignored. Carr's *The Twenty Years' Crisis* (purged of its appeasement punch-line) remains one of the most widely used text books in the instruction of international relations theory, but his other works, most notably *Conditions of Peace* and *Nationalism and After*, are long out of print and almost never cited. As Whittle Johnston observed, Carr has "at least two different theories," one famous, one ignored.[45]

The well-known main argument of *The Twenty Years' Crisis* is that the disarray culminating in the Second World War was caused by the idealist harmony-of-interests doctrine and the inability of Britain's power resources to sustain her role as international hegemon.[46] In *Nationalism and After*, however, and to a lesser extent *Conditions of Peace*, the crisis is attributed to the tension between "technological interdependence and political parochialism." The first theory sees a crisis in the reigning ideology and in the relative power positions of leading states in the system; the second posits a much more fundamental crisis of the national state and state-system.

The central claim of Carr's second theory is the obsolescence of the European nation-state and state-system as an arrangement for providing military security and organizing production.[47] Carr argues that "modern technological developments" are making the nation-state "obsolescent as the unit of military and economic organization."[48] Carr sees the emergence of a "few great multinational units" which are culturally "civilizations," economically what the German geopoliticans referred to as *Grossraum* (great spaced), and militarily characterized by "strategic integration," a vision widely held by global geopoliticans.[49] Carr sees the emergence of multinational units in both the United States and the Soviet Union, and observes about the Second World War that "none of the main forces that have gone to make the victory is nationalist in the older sense."[50] The emergent global order composed of "a small number of large multinational units exercising effective control over

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Carr and Political Realism: Vision and Revision," *Review of International Studies* 11, no. 1 (January 1985): 1–16.

45. Whittle Johnston, "E. H. Carr's Theory of International Relations: A Critique," *Journal of Politics* 24, no. 4 (November 1967): 861.

46. The other main branch of neorealism, Gilpin's theory of hegemonic instability, is explicitly an elaboration of Carr's first theory, also rooted in Thucydides. See Gilpin, *War and Change in World Politics*.

47. Carr's materialist argument is most indebted to Marx's production-centered materialism, but he assigns military technology a role not explicitly or readily reducible to productive forces and relationships. Carr, *Conditions of Peace*, 57.

48. Ibid., 39.

49. Ibid., 54; Andreas Dorpalan, ed., *The World of General Haushofer: Geopolitics in Action* (New York: Farrar and Rinehart, 1942); and Johannes Mattern, *Geopolitik: Doctrine of National Self Sufficiency and Empire* (Baltimore: John Hopkins University Studies in Historical and Political Science, 1942).

50. Carr, *Conditions of Peace*, 37.

vast territories" promises to replicate the patterns of the eclipsed European system, with "competition and conflict" and a "new imperialism" which would be "simply the old nationalism writ large" and likely to produce "more titanic and devastating wars."[51] Carr's slim hopes for peace rest on the decoupling of national sovereignty from military security, great power self-restraint, and international functional agencies.[52]

HERZ AND MORGENTHAU AND NUCLEAR ONE-WORLDISM

The development of nuclear weapons forced realist thinkers to reassess the relationship between material context and the security implications of anarchy on a global rather than merely regional scale. The most prevalent early realist view of the implications of nuclear weapons for interstate politics was essentially an extension of the arguments of Carr and others on the impact of the mature industrial revolution on the European state-system: nuclear weapons had produced a situation of world-wide vulnerability for even the greatest of states, comparable to the perilous state-of-nature, and the emergence of a world state was therefore necessary for security. This simple "nuclear one-worldist" argument was advanced in many variations by many realists,[53] as well as world federalists who differed with one another about secondary issues of timing, transition, and the character of a security-appropriate world state. The two most carefully formulated realist versions of nuclear one worldism were advanced by John Herz, pioneering theorist of the security dilemma, and Hans Morgenthau, who played a central role in establishing realism in American international theory.

The most theoretically developed realist version of nuclear one-worldism was provided by Herz, who argued that the most basic function of states is providing security through military control of territory, which requires territorial "impermeability."[54] It is not enough for a state apparatus to aspire to, claim, or even be recognized as having statehood. The state apparatus must be capable of making good its claim, and states are driven to consolidate as the technological bases of military viability shows increasing scale effects. With the advent of nuclear weapons, states cannot maintain a protective "shell" and have become

51. Ibid., 55. Here Carr's reaction to the German geopoliticans' and Burnham's image of a handful of world powers locked in struggle is similar to George Orwell's.

52. Ibid., 60.

53. For the most starkly realist version of nuclear one-worldism, see James Burnham, *The Struggle for the World* (New York: John Day, 1947).

54. John Herz, *International Politics in the Atomic Age* (New York: Columbia University Press, 1960). The first half of Herz's book summarizes the understanding of the impact of the mature industrial revolution held by Carr and others and the second half treats the development of nuclear weapons as a continuation of this same process.

"permeable," and therefore another consolidation is required.[55] When "not even half the globe remains defensible against the all-out onslaught of the new weapons," the "power of protection, on which political authority was based in the past, seems to be in jeopardy for any imaginable entity." Humans inhabit a "planet of limited size," but "the effect of the means of destruction has become absolute."[56] Nuclear explosives have produced "the most radical change in the nature of power and the characteristics of power units since the beginning of the modern state system," or perhaps "since the beginnings of mankind." This development "presages the end of the territorial protective function of state power and territorial sovereignty" and the "chief external function of the modern state therefore seems to have vanished."[57]

Hans Morgenthau advanced another one-worldist reading of the nuclear situation that also emphasized the military obsolescence of the nation-state and the need for a world-state.[58] Best known for his role in synthesizing and propagating realism in the United States, Morgenthau's nuclear one-worldism has been largely abandoned by his many followers. He agreed with the materialist argument of nuclear one-worldism that nuclear weapons had rendered the nation-state *militarily* obsolete: "The feasibility of all-out atomic war has completely destroyed this protective function of the nation state. No nation state is capable of protecting its citizens and its civilization against all-out atomic attack."[59] He also agreed with the world federalist view that only a world state with a monopoly on violence could solve the problem of insecurity created by nuclear weapons. In *Politics Among Nations* he observed: "There can be no permanent international peace without a state coextensive with the confines of the political world."[60] The observation that only a world state can bring permanent peace has been acknowledged by many realists, but Morgenthau went a decisive step beyond this view to argue that the state-system and modes of consciousness it has generated need to be radically changed for security reasons. "Instead of trying in vain to assimilate nuclear power to the purposes and instrumentalities of the nation-state," there was a need "to adapt these purposes and instrumentalities to the potentialities of nuclear power." Doing this, however, "requires a radical transformation—psychologically painful

55. Herz's nuclear one-world argument is an extension of the concept of the "security dilemma." John Herz, *Political Realism and Political Idealism* (Chicago: University of Chicago Press, 1951).

56. Herz, *International Politics in the Atomic Age*, 13.

57. Ibid., 22. For an extended critique, see Robert E. Osgood and Robert W. Tucker, *Force, Order, and Justice* (Baltimore: Johns Hopkins University Press, 1967). Herz later endorsed a more conventional deterrence view: John Herz, "The Territorial State Revisited: Reflections of the Future of the Nation-State," *Polity* 1, no. 1 (fall 1968): 11–34.

58. For discussion of Morgenthau's nuclear one-worldism, see James P. Speer II, "Hans Morgenthau and the World State," *World Politics* 20, no. 2 (January 1968): 206–27; and Richard Rosecrance, "The One World of Hans Morgenthau," *Social Research* 48, no. 4 (winter 1981): 749–65.

59. Hans J. Morgenthau, *The Purpose of American Politics* (New York: Knopf, 1960), 170.

60. Hans J. Morgenthau, *Politics among Nations* (New York: Knopf, 1947), 491.

and politically risky—of traditional moral values, modes of thought, and habits of action." Without such a transformation "there will be no escape from the paradoxes of nuclear strategy and the dangers attending them."[61] Morgenthau, however, doubted that a world state could be created soon, because world community was insufficient. The resulting tragic impasse stems from the disjunction between inherited political arrangements and emergent material realities, rather than from timeless flaws in human nature.[62]

The argument of Herz and Morgenthau on the obsolescence of the state-system on a global scale and the need for a world state was similar to that advanced by various world federalists during this period.[63] The difference between this realist argument and world federalism was over secondary but important issues of how and when a world state might be established and what character it might or should take. Herz was agnostic about the appropriate institutional form of a world security organization, and Morgenthau doubted the short-term political feasibility of world federalist plans and the appropriateness of the federal founding of the United States as a model for world state formation.[64] Whereas the world federalists argued that their long-preferred institutional form had now become practically necessary, realist nuclear one worlders applied the essential logic of Hobbes's argument to the nuclear era: nuclear weapons had created a state-of-nature situation of mutual vulnerability that necessitated a sovereign consolidation of authority.

The realist argument about the evolution violence interaction capacity as it appears in the analyses of Carr, Herz, and Morgenthau is essentially "Hobbes set to history." The industrial and nuclear revolutions altered the scale at which a state-of-nature situation of mutual vulnerability existed. Coupled together, these materialist historical realist arguments suggest a simple pattern of change (see Figure 2). Before the industrial revolution, security was consistent with a state-of-war anarchy on the regional scale of Europe; the mature industrial revolution produced a state-of-nature anarchy at the regional scale, at the same time that industrial revolution produced an increased interaction capacity which replicated a state-of-war anarchy on a global scale. The nuclear revolution, as first interpreted by realists, replicated this process, changing a state-of-war anarchy into a state-of-nature anarchy. Because there was no longer any geographical periphery providing space for the

61. Hans J. Morgenthau, "The Four Paradoxes of Nuclear Strategy," *American Political Science Review* 68, no. 1 (March 1964): 35.

62. Morgenthau's argument thus diverges from Neibuhr's claim that human frailties precluded a world state. Reinhold Neibuhr, "The Illusion of World Government," *Foreign Affairs* 27, no. 2 (April 1948): 379–88.

63. Emery Reves, *The Anatomy of Peace* (New York: Harper, 1946); Cord Meyer Jr., *Peace or Anarchy* (New York: Atlantic, 1947); A. C. Ewing, *The Individual, The State and World Government* (New York: Macmillan, 1947); Owen J. Roberts, John F. Schmidt, and Clarence K. Streit, *The New Federalist* (New York: Harper & Brothers, 1950); and Guiseppe A. Borgese, *Foundations of the World Republic* (Chicago: University of Chicago Press, 1953).

64. Morgenthau, *Politics among Nations*, 499.

replication of a state-of-war anarchy on a larger scale, however, this transformation would entail only consolidation and not expansion of the state-system.

Figure 2

SECURITY SYSTEM EVOLUTION IN EARLY REALISM

Preindustrial	Industrial	Nuclear
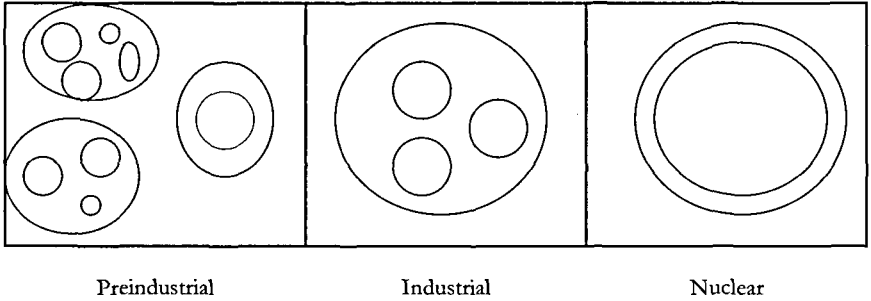
MATERIAL CONTEXT IN WALTZ'S THREE IMAGES AND NEOREALISM

Material context played a major role in early realist thinking on the relationship between anarchy and security. These material contextual factors largely disappear in Waltz's influential three images and his neorealist theory. Waltz's three image schema of human nature (first image), domestic structure (second image), and system structure (third image) ignores what might be termed the original or ground image of the material context composed of geography and technology. Although Waltz's favored third image theory is derived from Rousseau, with some reference to Hobbes, Waltz makes no mention of the important role Rousseau assigned to topographical fragmentation in determining that Europe was a plural and thus potentially anarchic system. Waltz thus takes the top system structural part of Rousseau's argument, while ignoring the materialist generative bottom half of it. Using Hobbesian categories, Waltz observes that "states in the world are like individuals in the state of nature,"[65] but does not conclude from this fact that states must combine because "individuals, to survive, must combine; states, by their very constitution, are not subject to a similar necessity."[66] He thus builds into his very definition of a state the security viability which is, in fact, historically variable. This narrowing of material context is in part the product of his central question (what

65. Waltz, *Man, the State, and War*, 163.
66. Ibid., 162.

are the causes of war?), which, in large measure, assumes the existence of states in systemic relationships.[67]

Waltz's seminal formulation of neorealism in *Theory of International Politics* develops into a social scientific theory the Rousseauian thoughts on anarchy unearthed in the exegesis of *Man, the State, and War*. Not surprisingly, the neglect of material context continues. In the central three-tiered conceptual apparatus of neorealism (ordering principle, extent of functional differentiation, and distribution), material factors are present only in the circumscribed variable of distribution. Waltz observes that the "perennial forces of politics are more important than new military technology."[68] He also observes that "nuclear weapons do not equalize the power of nations because they do not change the economic bases of a nation's power,"[69] and because they neither caused nor changed the bipolarity of the post–Second World War system.

In subsequent essays Waltz sketched a very different view, in which nuclear weapons seem to negate the perennial political force of anarchy, and convert the anarchic state-of-war into a peace more robust than could be reasonably provided by a global sovereign.[70] While nuclear weapons are clearly a material variable, and the only material variable in the neorealist model is balance or distribution, the effects of nuclear weapons are explicitly held to be unrelated to distribution.[71] As a result, Waltz's claims remain unrelated to, perhaps in contradiction to, the conceptual apparatus and claims of neorealism, and whatever their substantive merit, are essentially ad hoc.[72]

Three conclusions emerge from this exegesis. First, an examination of the sometimes implicit and sometimes explicit role of nondistributional material variables in realist thinking about the relationship between anarchy and security, and thus on the security viability of states and state-systems, has revealed two versions of one general argument. In the first and simplest ahistorical materialist version found in Hobbes, levels of vulnerability are the decisive factor

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67. This disappearance is perhaps also a product of the general disfavor that geopolitical thinking suffered from after the Second World War due to its associations with German *geopolitik* and Nazi aggression.

68. Waltz, *Theory of International Politics*, 173. For further elaboration of this treatment of technology, see Robert J. Art and Kenneth N. Waltz, "Technology, Strategy, and the Uses of Force," in *The Use of Force*, ed. Robert J. Art and Kenneth N. Waltz (New York: Little Brown, 1971).

69. Waltz, *Theory of International Politics*, 181.

70. Kenneth N. Waltz, "The Spread of Nuclear Weapons: More May be Better" Adelphi Paper no. 171 (London: International Institute for Strategic Studies [IISS], 1981); and Kenneth N. Waltz, "Nuclear Myths and Political Realities," *American Political Science Review* 84, no. 3 (September 1990): 731–44.

71. "Within very wide ranges, a nuclear balance is insensitive to variation in numbers and size of warheads" (Waltz, "Nuclear Myths and Political Realities," 740).

72. For substantive criticisms of Waltz's nuclear argument, see Sagan chapters in Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (New York: Norton, 1995). For analysis of the disjuncture between Waltz's neorealism and nuclear argument, see Daniel H. Deudney, "Dividing Realism," *Security Studies* 2, nos. 3/4 (spring/summer 1993): 7–37.

distinguishing two types of anarchy: the perilous state-of-nature anarchy and the security tractable state-of-war anarchy. In the version of the argument found in Carr, Herz, and Morgenthau, Hobbes is "set to history," and changes in levels of vulnerability over different sized areas are decisively shaped by major technological developments. In short, the central realist argument about the relationship between anarchy and security is that it depends on levels of vulnerability rooted in the material context.

Second, this exegesis has brought to light an important feature of the kind of argument made by early realists about the relationship between the material contextual variable of violence interaction capacity and the security viability of anarchy. Hobbes does not say that a state-of-nature anarchy inevitably will give way to a sovereign state order, or that a state-of-nature anarchy necessarily causes the creation of a sovereign state order. Rather, Hobbes says that if there is going to be security, then a state-of-nature anarchy must give way to a sovereign state order. Similarly, Carr, Herz, and Morgenthau do not say that the intense violence interaction capacity that characterized Europe in the industrial era, and the world in the nuclear era, will inevitably give way to the replacement of anarchy with more consolidated political arrangements, but rather that such consolidation is necessary for security. The key feature of all these arguments is that they are making claims about what is security functional in particular material contexts. They are not claiming that the political arrangements they identify as security functional will come to exist simply because they are security functional.[73] Indeed, a central theme of these realists is that the creation of arrangements needed for security often face daunting obstacles. These arguments are practical in that they identify what needs to be done in particular contexts to be secure, leaving free but constrained agents to determine whether security functional arrangements are achieved or whether acute insecurity will prevail.

Third, the widespread view that neorealism constitutes a refinement of the key ideas of a long line of earlier thinkers is significantly compromised. While neorealism can rightly claim to embody a clearer version of earlier arguments about the internal dynamics of systemic anarchy, neorealism left behind a logically prior and more important realist argument about the relationship between material contexts and the security viability of anarchies. Neorealism's neglect of nondistributional material variables in neorealism helps account for why neorealism has so much less purchase on major change than earlier realists. Recovering such

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73. This kind of functionality argument is similar to Waltz's version of balance of power theory, which holds that balancing is necessary for security in systemic anarchies, not that states will inevitably balance, or balance effectively, when faced with threats. Waltz, *Theory of International Politics*, 701–2; and Fred Halliday and Justin Rosenberg, "Interview with Ken Waltz," *Review of International Studies* 24, no. 3 (July 1998): 371–86. For an extended discussion of functionality arguments, see Deudney, "Geopolitics and Change," in Doyle and Ikenberry, *Change in International Relations Theory* (Boulder: Westview, 1997), 91–123.

variables opens the possibility of an expanded structural-materialist realist security theory with the capacity to account for major change without turning, as have most critics of neorealism, to ideational and constructivist variables.

MATERIAL CONTEXTS, STATES, AND STATE-SYSTEMS

A N ELEMENTAL claim of realism, that material power decisively shapes security-political outcomes, was once developed as a security system argument by many eminent realists. Having demonstrated its presence and importance (and neglect), we turn to a second task of formulating systematically these arguments.

Although analyzed by realist and geopolitical thinkers for centuries, there exists no generally accepted way of distinguishing and classifying different material variables. Many realist theorists analyze the effect of a state's surrounding "environment" without really making a geopolitical argument. The environment of a security-providing unit has two interactive but distinct components: the particular social setting (that is, structure of the system, the practices of the other units, and the intentions of other actors, etc.), and the material context composed of geography and technology.[74] To the extent that recent realist theorists analyze compositional aspects of material contexts, they do so as elements in systemic rather than system theory. Material contexts are treated as shaping outcomes within and between units and within system structures rather than generating units and systems.

VIOLENCE INTERACTION CAPACITY

The most important way in which power varies compositionally is with regard to *violence interaction capacity*. This is one of the most central notions in political science and international relations theory, and not surprisingly, it appears under many different labels: "position" and "accessibility" and "effective distance" in traditional geopolitics; "loss-of-strength gradient"[75] in recent quantitative geopolitics; "offense

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74. For an attempt to treat both the interstate and the material context as components of "environment," see Harold and Margaret Sprout, *The Ecological Perspective on Human Affairs, with Special Reference to International Politics* (Princeton: Princeton University Press, 1965). Compositional variables figure prominently in the unrefined and conceptually underdeveloped security-system arguments of the global geopoliticans. For a reconceptualization using a generalized version of Marxian historical production materialism, see Daniel H. Deudney, "Geopolitics as Theory: Historical Security Materialism," *European Journal of International Relations* 6, no. 1 (March 2000): 77–108.

75. By far the most important work on "loss-of-strength gradient" is: Kenneth Boulding, *Conflict and Defense* (New York: Harper & Row, 1963). Boulding's analysis parallels the main conclusions of my argument about the implications of nuclear revolution and has been unjustly neglected by recent analysts. This type claim is also part of Robert C. North, *War, Peace, Survival: Global Politics and Conceptual Synthesis* (Boulder: Westview, 1990). Also, see Quester, *Offense and Defense in the International System*; and Patrick O'Sullivan, *Geopolitics* (New York: St. Martin's, 1986).

and defense balance" in security studies; "interdependence" in early twentieth-century and neoliberal and neorealist international relations theory;[76] "dynamic density" in late nineteenth-century social theory; and it appears in part in some "power transition" theories.[77] Embedded in different models, each formulation has different connotations, but all are attempting to express the same common-sense insight that the capacity of actors to interact with one another has profound implications for security.

Violence interaction capacity is an aggregate factor composed of *violence density* and *violence proximity*. Violence density is determined by dividing the volume of violence by habitable territory; violence proximity is determined by dividing the velocity of violence by the size of the terrain. Variations in violence density and violence proximity can thus be combined to produce a rough spectrum of variation in violence interaction capability: *absent*, *weak*, *strong*, and *intense* (see Figure 3). Because this variable is a complex aggregate, it is necessary to unpack its several dimensions.

The violence proximity of material contexts varies along a spectrum (the horizontal axis) that can be conveniently divided into four parts: *isolated*, *distant*, *close*, and *immediate*. Isolated means that no direct human contact occurs between two locations. Distant violence proximity exists when direct interaction occurs, but transport is limited to goods with a high value-to-weight ratio and transit time extends into weeks and months. Close violence proximity exists when bulk transport can occur within one to ten days. Immediacy exists when transport of violence capability in an area can occur within a day or less.[78]

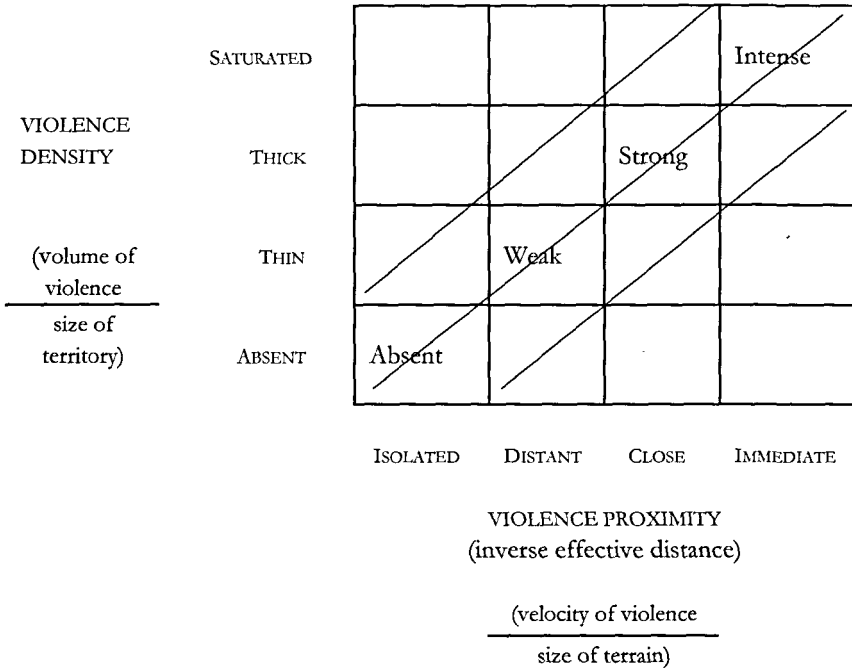Several consequences of variations in violence proximity are readily evident. Isolation produces complete freedom from conquest and contamination, but with

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76. Early analysis of interdependence emphasized military as well as economic interdependence, but recent work has mainly focused on economic interdependence. For early treatments emphasizing military dimensions, see H. G. Wells et al., *The Idea of a League of Nations* (New York: Atlantic Monthly Press, 1919); and Ramsey Muir, *The Interdependent World and Its Problems* (New York: Macmillan, 1932). For recent treatments emphasizing economics, see Peter Katzenstein, "International Interdependence: Some Long Term Trends and Recent Changes," *International Organization* 29, no. 4 (autumn 1975): 1021–34; and Robert O. Keohane and Joseph S. Nye Jr., *Power and Interdependence* (Boston: Little, Brown, 1977).

77. For an overview see Jacek Kugler and A. F. K. Organski, "The Power Transition: A Retrospective and Perspective Evaluation," in *Handbook of War Studies*, ed. Manus Midlarsky (Boston: Unwin Hyman, 1989), 171–94.

78. Analyses of the political implications of accelerating speed and velocity have been a staple of Western discourse since the development of the railroad and the telegraph in the middle of the nineteenth century. For overall treatments, see Stephen Kern, *The Culture of Time and Space, 1880–1918* (Cambridge: Harvard University Press, 1983); and Gerry Kearns, "Prologue: Fin de Siecle Geopolitics: Mackinder, Hobson, and Theories of Global Closure," in *Political Geography in the Twentieth Century*, ed. Peter J. Taylor (New York: Belhavne, 1993), 9–30. The importance of speed has also been emphasized by several postmodern theorists, particularly Paul Virilio. For discussion, see James der Derian, ed., *The Virilio Reader* (New York: Basil Blackwell, 1998); and James der Derian, "The (S)pace of International Relations: Simulation, Surveillance, and Speed," *International Studies Quarterly* 34, no. 3 (September 1990): 295–310.

Figure 3
VIOLENCE INTERACTION CAPACITY

VIOLENCE PROXIMITY
(inverse effective distance)

$$\frac{\text{(velocity of violence}}{\text{size of terrain)}}$$

the potential cost of cultural, technological, immunological, and economic stagnation. When isolation is lost, particularly if suddenly, annihilation or domination can result.[79] Distant violence proximity permits limited interaction, thus avoiding both technological and immunological stagnation, but precluding intensive military and economic interaction. In close and immediate situations, the possibilities for economic and military interaction are much greater.

79. The largest historical example of a sudden loss of isolation is the European "discovery" of the New World, which brought in its wake the horrific destruction of Amerindian polities and societies. With the sudden loss of isolation, power distributional asymmetries between the Europeans and New World peoples enabled the Europeans to establish far-flung systems of imperial control that lasted until diffusion of technological and organizational capabilities occurred. For analyses, see Alfred Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport, Conn.: Greenwood, 1972); Alfred Crosby, *Ecological Imperialism: The Biological Expansion of Europe 900–1900* (New York: Cambridge University Press, 1988); and V. G. Kiernan, *European Empires from Conquest to Collapse, 1815–1960* (New York: Fontana, 1982). The role of the diffusion of European technologies in the decline of imperialism has been underemphasized in recent treatments. For an historical overview, see Daniel R. Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imprialism, 1850–1940* (New York: Oxford University Press, 1988).

It is important to emphasize that violence proximity is not simply a function of the velocity of violence, but is a ratio of the velocity of violence and terrain size.[80] Calculating the velocity of violence capability characteristic of a particular material context is thus, in principle, a fairly straightforward exercise. The velocity of violence depends upon the interaction among particular technologies and geographies. For example, a mountainous terrain affords very different velocities of violence, depending upon whether one is attempting to cross it on foot or by airplane. Of all the terrestrial surfaces, the surface of the sea presents the least topographic obstacles to human conveyance, and the atmosphere and orbital space present the least obstacles to vehicles designed to pass through them.

To determine the violence proximity (the inverse effective distance[81]) characteristic of a particular material context, the velocity of violence must be divided by the size of the terrain, measured in absolute distance. Thus, if the size of the terrain remains constant, increases in the velocity of violence will produce an increase in violence proximity; and if the velocity of violence remains constant, increases in the size of the terrain will produce a decrease in violence proximity. Typically changes in terrain size have accompanied changes in violence velocity, so their impact on violence proximity depends on the proportionality of the change.

This seemingly subtle distinction is very important in practice, and helps capture an important feature of the contemporary era. The expansion of human activity into the atmosphere, and then into near-earth orbital space, marked a great expansion of the absolute size of the terrain. The increase in velocity afforded by the airplane, and then the ballistic missile, was even greater. As a result, the violence proximity between locations on the earth increased even as the size of the terrain expanded.[82]

The second component of violence interaction capability is *violence density*, which, like violence proximity, is the ratio of a particular technological capability and with a particular geographical setting. The volume of violence (like the velocity of

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80. Terrain refers to the total geographic environment within which interaction occurs and thus potentially includes extraterritorial media such as the ocean, atmosphere and orbital space as well as territory inhabited by human populations.

81. Use the formulation of "violence proximity" rather than "effective distance" simply for semantic felicity—to make it easier to combine an index of proximity/distance with an index of density (see Figure 6) and have both "high/more" and "low/less" align, and to avoid the awkwardness of "high effective distance" determining "low interaction capacity."

82. For further discussion of the physical features of earth orbital space and their security implications, see Robert Salkeld, *War and Space* (Englewood Cliffs: Prentice-Hall, 1970); Daniel Deudney, "Whole Earth Security: A Geopolitics of Peace," Worldwatch Paper no. 55 (Washington, D.C.: Worldwatch, July 1983), 15–18; and Everett C. Dolman, "Geostrategy in the Space Age: An Astropolitical Analysis," *Journal of Strategic Studies* 22, nos. 2/3, (June/September 1999): 83–106.

violence) is a measure of absolute quantity, which can be calculated relatively straightforwardly. Territory, which some employ as a synonym for the sum of geographical features, or the pattern of juridical compartmentalization of space,[83] means here *terrain inhabited by populations*. The protection of a territory is closely linked with the protection of a population: the great bulk of property and resources that sustain human populations are connected to territory, and it is impossible to protect population if one cannot protect territory. Protected territory is protected population, so the relationship of violence capability and territory is a first approximation for security. Not surprisingly, the term "territorial" is often built into definitions of the state as a protection-providing unit.[84]

Violence density (the ratio of violence volume to territory) also varies along a spectrum which can be usefully divided into four segments: *absent, thin, thick,* and *saturated* (the vertical axis in Figure 3). Because violence density is also a ratio, absolute increases in violence volume do not translate necessarily into changes in violence interaction capability. A significant increase in violence volume in statically sized territory produces an increase in violence interaction capacity. If, however, an increase in violence volume is accompanied by a proportional increase in territory size, then violence interaction capacity remains unchanged; and an increase in violence volume accompanied by a proportionally greater increase in territory size produces a decline in violence interaction capacity.

It should be noted that the four levels of violence interaction capacity constituting the primary specified variation are incomplete in two ways. First, the four specified levels do not exhaust all the logical possibilities (recall the empty spaces in Figure 3). This incomplete articulation of potential analytic categories does not matter, however, because all historical security systems are situated within the four specified conditions of violence interaction capacity. Conditions of violence interaction capacity outside the diagonal band are certainly conceivable. For example, a world with airplanes and ballistic missiles, but lacking nuclear weapons, would lack the violence density necessary to be classified as either thick or saturated, and so would fall outside the diagonal band to the right. Alternatively, human colonization of other celestial bodies in the solar system (such as asteroids) would mark so great an increase in the size of the terrain that it is unlikely that velocity would increase proportionally, producing a situation of either distant or close violence proximity, thus falling to the upper left of the diagonal band.[85]

83. Robert David Sack, *Human Territoriality: Its Theory and History* (New York: Cambridge University Press, 1986); and Ivo D. Duchaek, *The Territorial Dimension of Politics: Within, Among, and Across Nations* (Boulder: Westview, 1986).

84. For an extended discussion of the territorial dimension of the state-system, see Alexander B. Murphy, "The Sovereign State System as Political-Territorial Ideal," in *State Sovereignty as Social Construct*, ed. Thomas J. Biersteker and Cynthia Weber, (New York: Cambridge University Press, 1996), 81–120.

85. The classic work of disciplined speculation on this topic remains Dandridge Cole and Donald W. Cox, *Islands in Space: The Challenge of the Planetoids* (Philadelphia: Chilton, 1962).

Second, the initial modelling of this four-fold variation makes the simplifying assumptions that violence interaction capacity is homogeneous, and that violence interaction capacity is the only important compositional dimension of power.

ANARCHY AND VIOLENCE INTERACTION CAPACITY

The core realist answer to the core realist question—"is anarchy compatible with security?"—is "it depends," and it is the variations in violence interaction capacity upon which it depends. Having specified and delineated the variable of violence interaction capacity, it is now possible to advance a version of this argument as a set of social scientific theoretical propositions (see Figure 4). For purposes of the first step in this reformulation, the middle two variants of violence interaction capacity can be combined, and the three-part question becomes: what is the relationship between anarchy and security in situations of intense, strong/weak, and absent violence interaction capacity?
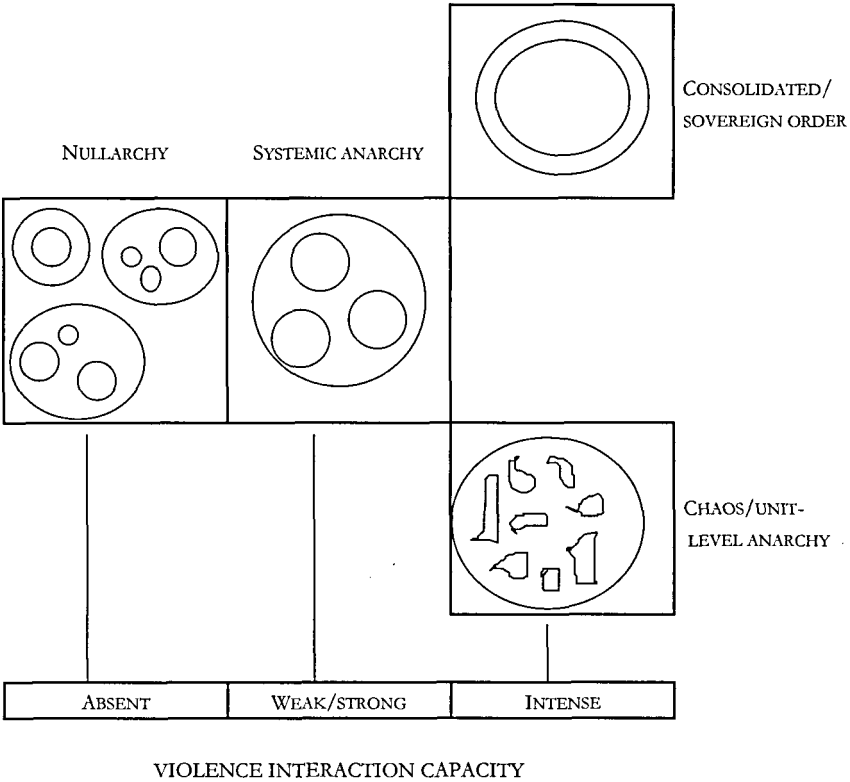
Focusing on the two situations of intense and strong/weak, two propositions emerge: (1) *an anarchy in a situation of intense violence interaction capacity is intrinsically perilous for security;* and (2) *an anarchy in situations of strong or weak violence interaction capacity is potentially tractable in terms of security.* These two propositions make explicit and conceptually clear the distinction between Hobbes's state-of-nature and state-of-war anarchies. The underlying logic of these propositions is that in a situation of intense violence interaction capacity, the capability of actors to do one another grievous harm, is so great that authoritative governance is needed for security; but in situations of strong or weak violence interaction capacity that capability is sufficiently limited so that the absence of authoritative governance does not constitute an intrinsic barrier to the realization of security.

The logic of this position can be formulated in terms of relative and absolute gains and losses.[86] In situations of intense interaction capacity, the absolute losses at stake in interactions between actors is extreme. Relative gains and losses are overshadowed by the enormity of the absolute losses stemming from the abundance of ungoverned violence capability. This, in turn, motivates the leap in Hobbes's model from the perilous state-of-nature to the presumed security of a sovereign state order. Conversely, in situations of strong/weak violence interaction capacity, the absolute losses at stake in the interaction of actors are more moderate, and actors thus have no fundamental security incentive to subject their relations to authoritative governance. This argument circumscribes rather than fully contradicts the standard neorealist argument that actors prefer relative over absolute gains in anarchy. In situations of intense violence interaction capacity characteristic of the

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86. For relative versus absolute gains, see David A. Baldwin, ed., *Neorealism and Neoliberalism* (New York: Columbia University Press, 1993); and Robert Powell, "Anarchy in International Relations Theory."

Hobbesian state-of-nature, the fear of absolute losses dominates, but in situations of strong/weak violence interaction capacity, the neorealist argument still holds.

Figure 4
SIMPLE REALIST MATERIALIST SECURITY-SYSTEM THEORY

CONSOLIDATED/
SOVEREIGN ORDER

NULLARCHY   SYSTEMIC ANARCHY

CHAOS/UNIT-
LEVEL ANARCHY

| ABSENT | WEAK/STRONG | INTENSE |

VIOLENCE INTERACTION CAPACITY

Explicit and disciplined analysis of violence interaction capacity also enables consideration of the relationship between absent violence interaction capacity and anarchy. Here it is useful to augment our typologies, adding *presystemic nullarchy*, a situation characterized by no interaction, and, hence, no possibility of governance, along with the two familiar types of anarchy: *chaos* (unit-level and state-of-nature anarchy) and *systemic anarchy* (recall Figure 4).

The distinction between presystemic nullarchy characteristic of a multisystem world order, and the systemic anarchy characteristic of a state-system, captures the fact that there is a fundamental structural difference between the relationship of units which are in one system but lack central governance (systemic anarchy), and

the relationship of units in distinct systems (presystemic nullarchy).[87] This distinction can be seen by comparing the relationships between the Roman and Chinese empires in the second century of the Christian era, and between France and Britain in the eighteenth century. These two relationships were similar in that neither were governed by a central authority, but otherwise fundamentally different. Rome and China existed in separate systems with so little interaction that common governance was impossible, while Britain and France were parts of one system where common government was possible (but not necessary).

Presystemic nullarchy and systemic anarchy differ in three important ways. First, a systemic anarchy can only exist in a situation with enough interaction to support authoritative governance, while in a presystemic nullarchy the units are so weakly interactive that they cannot be configured in any other way. Second, a presystemic nullarchy is highly robust in the face of great distributional imbalances, while a systemic anarchy will tend to evolve into a hierarchy in this situation. Third, in a systemic anarchy—but not in a presystemic nullarchy—security-seeking units face strong incentives to respond to developments in other units with various practices (such as balancing, diplomacy, and sovereign recognition).

Distinguishing between presystemic nullarchy and systemic anarchy undermines the widespread conviction among contemporary realists that "anarchy" has existed from time immemorial.[88] That there has never been a nonanarchical system structure with world-wide scope is not evidence for the long-established existence of systemic anarchy. Rather, it is a consequence of the fact that, until five centuries ago, violence interaction capacity on a world-wide scope was absent, and thus able to support nothing but a presystemic nullarchy. Where relatively higher interaction capacity existed, anarchies have occurred, but less frequently than hierarchies. The two most important systems—the classical European and the global industrial—both had anarchic system structures, but both were characterized by moderate interaction capability, as well as a favorable set of secondary contextual material factors.

TECHNOLOGY AND AREAL SIZE

So far this reformulation has produced a more disciplined version of the timeless Hobbesian realist argument about the relationship between anarchy and security.

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87. Buzan, Little, and Jones formulate this distinction as one between "subsystem dominant" and "system dominant," but referring to the noninteractive systems in a multisystem world order as "subsystems" entails an unwarranted teleological assumption that a single system will emerge. Subsystems are more usefully conceptualized as subcomponents of an actual system (for example, the Holy Roman Empire in modern Europe, or the hegemonic system of the United States in the New World proclaimed in the Monroe Doctrine) rather than the noninteractive (and thus by definition not systemic) relationship between units in systems that may or may not eventually become parts of one system. Buzan, Little, and Jones, *Logic of Anarchy*, 75–77.

88. Mearsheimer, "The False Promise of International Institutions."

The ahistorical materialism of Hobbes's argument, however, differs from the historically materialist arguments of Carr, Herz, and Morgenthau: because the latter grappled with the fact that *changes in technology* were altering the *size of the area* within which a state-of-nature anarchy was occurring. Therefore, in order to theorize about the changing historical relationship between violence interaction capacity and the security viability of anarchy, it is also necessary to introduce the variables of technology and size in an explicit and disciplined way.

Technology is a factor widely acknowledged to be of great importance, and many analyses of the effects of particular technologies have been produced, but general propositions about the effects of technologies are strikingly absent in international theory. A central feature of all arguments that are both materialist and historical, whether geopolitical realist or Marxian, is the claim that history can be periodized into segments or stages on the basis of distinct material contexts. To say that a materialist theory is "historical" means that materialist contexts vary across time in fundamental ways. The heterogeneity of history guarantees that periodization is a complex and problematic undertaking.[89] Material contexts, whether of production or destruction, are rarely neatly confined to one period, but can often be present in other periods in less developed form. Furthermore, material contexts are often constituted by a heterogeneity of geographic and technological features, which impose conflicting constraints and opportunities. Many disagreements among materialist historical theorists result from divergent interpretations of the material forces of a particular period.

Despite these problems, it is possible to identify four broad periods characterized by distinct sets of technological capabilities related to violence and geographic features that were rendered practically important by particular technologies. Working from the present into the past, there is a clear distinction between the *nuclear* technologies of the last half century, and the *industrial* technologies which characterized the material context during the century between approximately 1850 and 1950. For the periods prior to the maturation of the industrial revolution, divisions and nomenclatures are less well established.[90] There appears to be a fairly clear and significant distinction, however, between the roughly half millennium of the *early-modern* period, marked by the "gunpowder revolution"

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89. For major surveys of technological development consistent with the periodization used here, see Bernard Brodie and Fawn M. Brodie, *From Crossbow to H-Bomb*, rev. ed. (Bloomington: Indiana University Press, 1973); Trevor N. Dupuy, *The Evolution of Weapons and Warfare* (New York: Hero Books, 1984); and Arnold Pacey, *Technology in World Civilization: A Thousand Year History* (Cambridge: MIT Press, 1990).

90. Lewis Mumford, building on Marx and Patrick Geddes, introduced the distinction among the *eotechnic* (wind, water, and wood), the *paleotechnic* (coal, steam, and iron), and the *neotechnic* (electricity and alloys). This periodization, however, does not give sufficient emphasis to destructive capabilities to be employed here. Lewis Mumford, *Technics and Civilization* (New York: Knopf, 1934).

and the advent of oceanic transport, communication, and navigation capabilities, and the long *premodern* period stretching back to the agricultural revolution.[91]

Technological changes producing changes in the material context were important for Carr, Herz, and Morgenthau because they were altering the size of the area within which a state-of-nature anarchy was occurring. Therefore, it is also necessary to introduce a simple metric of size in order to historicize the materialist variable of violence interaction capacity. Although size was a prominent variable in the works of Aristotle, Montesquieu and other geopolitical writers, recent political science has given little attention to it.[92] In order to begin theorizing about size, a simple metric of four overall sizes,[93] each roughly an order of magnitude (that is roughly ten times as large) will suffice: *micro* (the area of a city-state, such as ancient Athens); *meso* (the area of a modern European nation-state, such as France); *macro* (the area of a continental federal or imperial state, such as the United States or the Soviet Union); and *mega* (the entire habitable territory of the earth).

Combining the two variables of technological capability and size with violence interaction capacity, it is possible to construct a general matrix to map changing patterns in the areal extent of different levels of violence interaction capacity (see Figure 5). This matrix reveals an overall trend of immense importance: the areas subject to intense violence interaction capacity have grown sharply in size.[94] Combining four rough measures of area (vertical axis) with four rough clusters of technological capability (horizontal axis), this pattern of change in the area within different levels of violence interaction capacity (the diagonal spaces delimited by the bold lines) is evident.[95]

91. Technological variations are exogenous to this model, and there is nothing in the model that forecloses the emergence of further technological developments of great significance for the areal extent of intense violence interaction capacity.

92. For a recent exception containing extensive empirical information, see Rein Taagepera, "Expansion and Contraction Patterns of Large Polities: Context for Russia," *International Studies Quarterly* 41, no. 3 (September 1997): 475–504.

93. I refer to these gradations as ones of "overall size" rather than "size" to reflect the need to hold density of population roughly constant in coding cases. To do so a figure similar in form to Figure 5 could be constructed, with large areas, like Canada and Australia, falling outside the diagonal, which would include the central regions of North America, and the western, southern and eastern regions of Eurasia.

94. For a multisided compilation of empirical indicators that remains remarkably robust after a quarter century, see John McHale, *World Facts and Trends*, 2nd ed. (New York: Macmillan, 1972).

95. The emptiness of the entire lower-right half of this box (Figure 5) leaves open explorations into the presence of other changes, perhaps most notably the decreasing size of groups or organizations potentially capable of accessing capabilities with impacts of greater scope.

Figure 5

CHANGES IN THE SCOPE OF DEGREES IN VIOLENCE INTERACTION CAPACITY

PERIODS
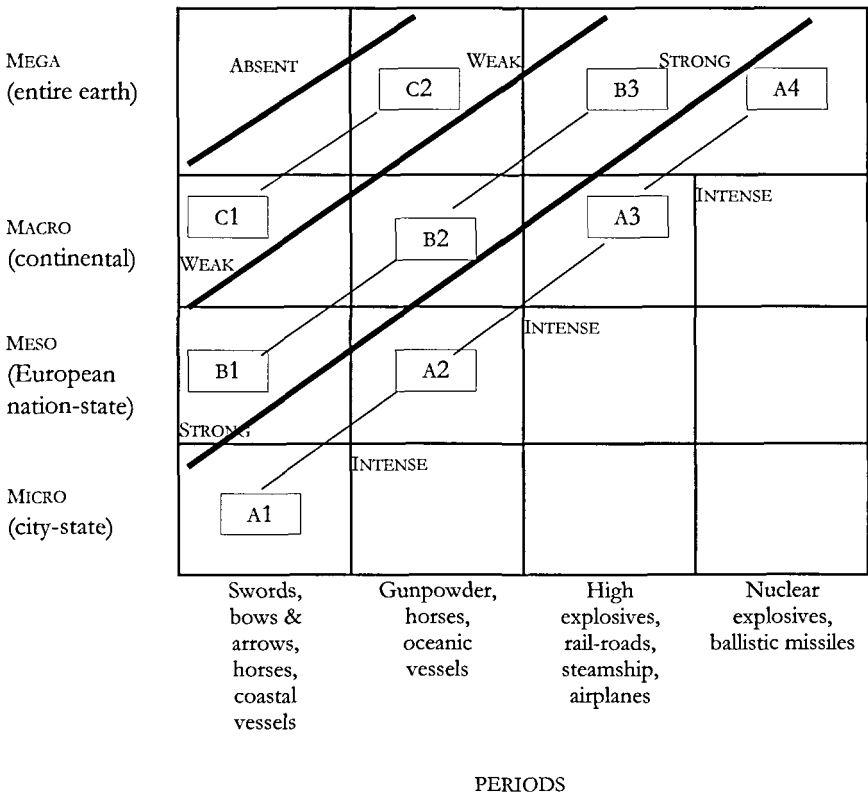
Both components of violence interaction capacity (violence proximity and density) have been involved in this trend. Taking the earth as a whole, there has been a striking change in violence proximity over time. The unmistakable overall pattern has been for violence proximity to rise, culminating in the universal immediacy produced by the airplane and the ballistic missile. This immediacy is not likely to be reversed on the earth, and the only prospect for the recovery of a general effective distance of "close" or "distant" lies in the expansion of terrain size that would result from the colonization of interplanetary space. Immediacy is now universal, but existed in smaller regions from the beginnings of history. Prior to the mastery of oceanic transport capability, large segments of the earth were isolated from one another. Yet even in this period of low violence proximity world-wide, situations of distant, close, and immediate existed. Violence proximity in one locale,

such as a city, always has been immediate, and within regions of continental scope violence proximity has varied from distant to immediate. As the world-wide violence proximity evolved from isolated to immediate, areas characterized by distant and close violence proximity initially expanded, but then disappeared.

There has also been a pronounced trend in the size of areas subject to different violence densities. The unmistakable overall pattern has been for violence density to rise, culminating in the universal saturation produced by nuclear weapons. This saturation is not likely to be reversed on the earth, and would probably not even result from the colonization of interplanetary space, because the size of the new territories is not likely to total much more than an approximation of the size of the earth's territory. Saturation is now universal, but existed in smaller regions from the beginning of history. Prior to the arrival of gunpowder, chemical high explosives, and nuclear weapons, large segments of the earth were characterized by absent or low violence density. Yet even in this period of low violence density worldwide, situations of thin, thick, and saturated violence density existed. Violence density in one locale, such as a city, always has been thick or saturated, and within regions of continental size violence density has varied from thin to saturated. As the world-wide violence density evolved from absent to saturated, areas with thin and thick violence density initially expanded, but then disappeared.

This matrix allows the formulation of a more historically dynamic version of the basic realist argument about the relationship between violence interaction capacity and the security viability of anarchy (recall Figure 4). *Given that security and anarchy are incompatible in situations of intense violence interaction capacity, realism posits the security necessity of authoritative governance on larger and larger scales as the area subject to intense violence interaction capacity increases* (A-1 through A-4). Major realist statements on the perils of unit-level anarchy track the four stages as intense violence interaction capacity emerges over larger areas. In the premodern era, Thucydides's account of the civil war in Corcyra provides an image of the security perils of anarchy in a micro-sized area.[96] In the early modern era, Bodin's and Hobbes's depiction of religious civil wars, culminating in the Thirty Years War, provides an image of the security perils of anarchy in a meso-sized area.[97] In the industrial era, Carr and other realists' accounts of the "European Civil War" (the First and Second World Wars) provide an image of the security perils of anarchy in the macro-sized continental area of Europe as a whole.[98] In the nuclear era, Herz's and

96. Despite the later influence of Thucydides' account of Greek interstate war, Greek political theory and practice was much more concerned with the problem of avoiding stasis, or internal violent discord. Peter T. Manicas, "War, Stasis, and Greek Political Thought," *Comparative Studies in Society and History* 24, no. 4 (October 1982): 673–88.

97. "…internal conflict, or civil war, constituted for Hobbes a much greater 'inconvenience' than war among nations" (Boucher, *Political Theories*, 146).

98. In the late nineteenth and early twentieth centuries, advocates of European unification (whether imperial or federal in form), began to emphasize that previous unification plans had been advanced as

Morgenthau's anticipations of a global nuclear war, a total war on a world-wide scale, conveys the perils of anarchy in the mega-sized area of the entire planet. In each of these steps, the security perils of a state-of-nature anarchy are seen occurring or potentially occurring on a larger scale.[99]

A central feature of the first three steps up the diagonal (recall Figure 5) is that the consolidated political authorities required to avoid the perils of a state-of-nature anarchy are themselves units in an even larger area characterized by strong violence interaction capacity, and thus are also subject to the incentives and constraints inherent in a state-of-war anarchy. Thus, the consolidated political authority of a micro-sized Greek city state is in the demanding but tractable systemic anarchy of the Greek city state system. In the early modern era, the consolidated political authority of a meso-sized nation state such as France or Britain is in the demanding but tractable systemic anarchy of the European state-system.[100] In the global-industrial era, the consolidated political authority of a continental, macro-sized multinational state such as Russia and the United States experiences the security imperatives of a state-of-war anarchy on a global scale, as would have a unified Europe, whether as a Hitlerian panregional empire or a federal union. Thus, in each of the first three steps, a larger state-of-war anarchy with strong violence interaction capacity was forming at the same time that a smaller state-of-nature anarchy was creating security imperatives for authoritative governance in an area previously characterized by strong violence interaction capacity.

The fourth stage (A-4) is like the previous three in that it is an areal expansion of what had been previously characteristic of a smaller area, but is also different in several important ways. The nuclear era has not entailed the emergence of a state-of-war anarchy on a larger scale because the finite boundaries of the earth had been completely filled with intense violence interaction capacity. This, in turn, means that an authoritative government with world-wide scope would not be forced to deal with the security imperatives resulting from external anarchy. Whereas previous authoritative governance had to avoid the recurrence of internal anarchy while at the same time navigating the perils of external anarchy, effective world government

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desireable to achieve *peace*, but were now *required* to achieve *security*. For a particularly strong form of this argument, see Wells et al., "The Idea of a League of Nations."

99. This analysis posits a series of static propositions about fit and misfit between anarchic structures and material contexts. As such, it says nothing about processes of change that might produce political arrangements fitted to their material context. For a general analysis of change and contradiction, and applications to the nuclear era, see Deudney, "Geopolitics and Change," 104–18.

100. The literature on the role of gunpowder in the consolidation of early modern European states is vast. For a sampling, see Richard Bean, "War and the Birth of the Nation State," *Journal of Economic History* 33, no. 1 (March 1973): 203–21; Charles Tilly, ed., *The Formation of National States in Western Europe* (Princeton: Princeton University Press, 1975); Anthony Giddens, *Violence and the Nation-State* (Berkeley and Los Angeles: University of California Press, 1986); and Kelly DeVries, "Gunpowder and the Rise of the Early Modern State," *War in History* 2, no. 3 (April 1998): 127–45.

would have only to deal with the problem of internal order, and therefore might be different in kind from previous forms of government.[101]

VARIEGATED VIOLENCE INTERACTION CAPACITY AND STATE-SYSTEMS

A final puzzle remains to be addressed: why are some areas which are characterized by strong violence interaction capacity viable as state-systems, while others are not? Examining the diagonal sequence of areas with strong violence interaction capacity (B-1 through B-3), we see that systemic anarchy, while tractable from a security standpoint, is not always present. This variation is particularly important for understanding the sources and limits of systemic anarchy in the case of the early modern European state-system (B-2): while the macro-sized area of Europe was security viable as an anarchy in the early modern period, other comparable regions (Russia, the Near East, India, and China) were consolidated into imperial states. The key explanation for this difference—advanced in the eighteenth century, present in Rousseau's analysis of the European system, and widely held by recent historians—is that the European topography was more fragmented than in comparable regions.[102] A parallel pattern occurs in the global industrial era (B-3): as the importance of topographical fragmentation in Europe was declining due to new technological capabilities, global scale topographical fragmentation, most notably the main ocean basins, were impeding global consolidation, enhancing the prospects for the persistence of a global scope anarchic state-system and reducing the likelihood of a world imperial state.[103]

This elemental geopolitical insight about the consequences of topographical fragmentation can be readily formulated as an ancillary proposition. The four specified degrees of violence interaction capacity are a useful simplification for first-order argument, but violence interaction capacity is often spatially uneven and

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101. The literature advocating a world state contains many statements lamenting the absence of an "invasion from Mars" which would galvanize the creation of a world state to balance against outside threats. I suggest a modification: in the absence of outside threat, the form a security-appropriate world government should take is unlike that of the hierarchical state because balancing is unnecessary.

102. Paul Kennedy summarizes the consensus: "For [its] political diversity Europe had largely to thank its *geography*" (Paul Kennedy, *The Rise and Fall of the Great Powers* [New York, N.Y.: Random House, 1987], 17). Also see Jean Baechler, *The Origins of Capitalism* (New York: St. Martin's, 1976); Robert Gilpin, "Economic Interdependence and National Security in Historical Perspective," in *Economic Issues and National Security*, ed. Klaus Knorr and Frank N. Trager (Lawrence: University Press of Kansas, 1977), 25; Wesson, *State Systems*, 110; and Quester, *Offense and Defense in the International System*.

103. The analyses of the global geopoliticans during the late nineteenth and early twentieth centuries was preoccupied with the question whether the material context in the emergent global scope system was like that of ancient Egypt and China or like ancient Greece and early modern Europe. Anticipations of the emergence of a world state were widespread, and the most famous of global geopolitical constructs, Mackinder's "Heartland" thesis, argued that there was a proclivity, but not an overwhelming one, for the emergence of a world state centered in the Eurasian interior. For an overview, see Stephen Jones, "Global Strategic Views," *Geographical Journal* 121, pt. 3 (October 1955): 99–115.

heterogeneous. The ways in which it is variegated are infinitely varied in their specifics, but two patterns are prevalent (see Figure 6).

The first variegation in violence interaction capacity is *eccentric ridging*, which occurs when an area is broken or divided by mountain ranges, rivers, or other physical obstacles. The classic examples of extensive eccentric ridging, recognized as important by historians and geopolitical analysts, are ancient Greece and, on a larger scale, the European peninsula and its surrounding waters. *Extensive eccentric ridging impedes system-wide hierarchies and facilitates system-wide anarchies.* Eccentric ridging adds to the defensive military capabilities of units, making it easier for them to impede the formation of system-wide hierarchies, and thus facilitates the emergence and persistence of system-level anarchy. Eccentric ridging provides the material division of power upon which anarchic system structures depend: before there can be a balance among units there must be separate units. Conversely, the absence of extensive eccentric ridging adds to the offensive military advantage of units, making it easier for one of them to form a system-wide hierarchy, and overcome balancing by other units. The classic examples of limited eccentric ridging, the Nile Valley and Mesopotamia in meso-size areas, and China, Russia, and, to a lesser extent the Middle East and Indian subcontinent, in macro-sized areas, have been long recognized by geopolitical analysts and historians.

Figure 6
VARIEGATED VIOLENCE INTERACTION CAPACITY
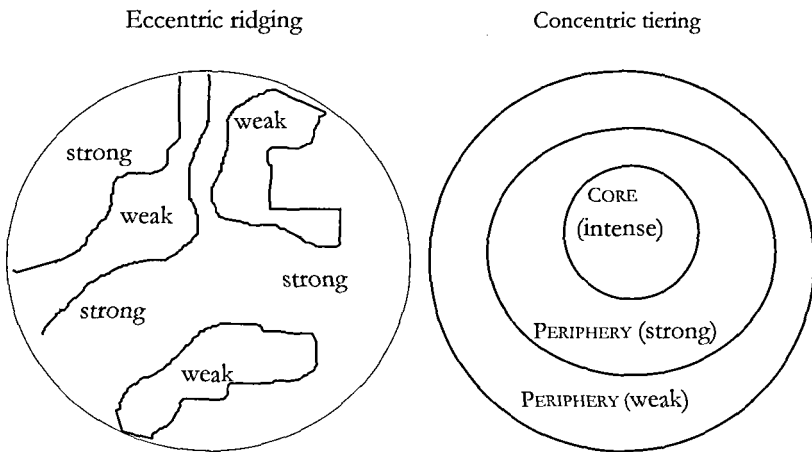
A second variegation of violence interaction capacity is captured by the distinction between a central region, or *core*, where violence interaction capacity is

greater, and a concentric ring (or rings) of *periphery* where it is lower. *Concentric tiering makes system-level anarchy at the core more robust (whether security functional or not), and system-level hierarchy harder to achieve.* Units and systems situated in a material context characterized by concentric tiering face a more complex set of pressures and dynamics than units and systems in nonvariegated ones because they are subject simultaneously to the demands of two material contexts. When a core area is surrounded by a periphery, a core hierarchy is harder to create because power resources from the periphery can be mobilized to augment balancing in the core.[104]

REALIST FUNDAMENTALS AND SECURITY SYSTEM THEORY

IN THE RECENT divide of international relations theory between defenders and critics of neorealists, a major argument of earlier realist thinkers had been neglected: the argument about the relationship between anarchy, security and material context. Whether anarchy is compatible with security depends on the extent of violence interaction capacity present. This argument, refined into a series of social scientific propositions, complements neorealist arguments about the dynamics of systemic anarchy, and provides a fuller structural-materialist realist security theory. This argument also provides contemporary realism with a powerful answer to those critics who have maintained that because neorealism lacks a theory of system change, the entire realist tradition lacks such a theory.

The inclusion of the thoughts of early realists as a component of an expanded structural-materialist realism adds another fundamental insight appropriately included in the realist catechism of political truths. As realists have long insisted, the security perils of a state-of-nature anarchy are always lurking as a possibility that can never be eradicated, and no political order, however well-established and imposing, is ever more than a few steps away from falling back into perilous disorder. To this vital and timeless insight can now be added an equally vital insight, which is sometimes very timely, about historical change in material contexts: state-systems, no matter how long established, well-balanced, or moderated by societal elements, can be, have been, and may again be thrown back into a state-of-nature anarchy by changes in technology that produce situations of intense violence interaction capacity over greatly larger areas. Since the viability of both the civil state and a state-of-war compatible with the survival of the civil state are shaped by

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104. For extended structural-materialist analysis of this changing core–periphery relationship, see Ludwig Dehio, *The Precarious Balance* (New York: Knopf, 1962); Dehio, *Germany and World Politics in the Twentieth Century*; and William R. Thompson, "Dehio, Long Cycles, and the Geohistorical Context of Structural Transition," *World Politics* 45, no. 1 (October 1992): 127–52. For a similar argument of the problems of regional state formation in the periphery, see Ian S. Lustick, "The Absence of Middle Eastern Great Powers: Political 'Backwardness' in Historical Perspective," *International Organization* 51, no. 4 (autumn 1997): 653–83.

the features of nature as the nonhuman material environment, the security viability of such arrangements remains in jeopardy so long as nature continues to be tortured by scientific and technological knowledge-seekers in order to reveal new violence potentials. This recovered vital insight about change suggests that realist theory has much more to say about fundamental or system change than realist security practices centered on the state may be prepared currently to accommodate.

The fact that this once central argument in realist thinking, applied to the nuclear era, points toward the security necessity of an authoritative world government of some sort is likely to be disturbing to contemporary realists. This also suggests that the real divide between neorealist theory and earlier realist thinking is not the greater rigor and social science clarity of neorealism, but rather the question of the meaning of the nuclear revolution for the security viability of anarchy. The logic of Hobbes's security materialist realism, geographically contextualized by Rousseau, set to history by Carr, and extended to the nuclear era by Herz and Morgenthau, leads to the conclusion that a state-of-nature type anarchy characterizes the interstate system in the nuclear era, and that authoritative governance is necessary for security. In contrast, most contemporary realists hold that the state-system, through postures and policies of deterrence, has obviated the need for global political consolidation (even if not to the extent that Waltz's nuclear argument holds it does). The fact that this sharp turn in the fundamental realist argumentation on the relationship between anarchy and security has been accompanied by the quiet abandonment of nondistributional dimensions of material context, and the narrowing of the grade of argument from security-system to state-systemic, suggests that contemporary American realists, when faced with the choice between the durability of systemic anarchy and state autonomy, on the one hand, and the importance of violence interaction capacity on the other, may have chosen the former for reasons having little to do with theory. At a minimum, the fact of this sharp turn in realism suggests that the more radical nuclear-revolution hypothesis needs not only to be seriously reexplored and developed, but also that such radical hypotheses may be more consistently realist than contemporary realist orthodoxy.

If we take seriously this realist security-system argument, the pervasive realist insistence that world government is fundamentally utopian and idealistic, may be emphasizing an historically misleading and conceptually non-realist lesson. Having such a world political arrangement is in an obvious sense novel, but is quite precedented in very important ways. When both sides of Janus-faced realism, the interstate and the intrastate, are placed in a historically materialist framework, creating authoritative world governance appears to be doing again what has been done successfully so many times before: leaving anarchy for security reasons, and doing so on a scope dictated by changing material contexts.

Perhaps one reason contemporary realists have been so averse to the conclusions of realist security-system theory is their deeply ingrained conviction that the only alternative to the lack of governance characteristic of anarchy is inherently hierarchical in nature. Operating solely within the realist tradition, the argument developed here has side-stepped this issue by ignoring possible variations in types of authoritative governance. While realists acknowledge that the governance of units within an international anarchy can take a myriad of forms, a central way in which liberals and their republican precursors differ from realists is in their insistence that republican forms of governance, both within units and between them, are as different from hierarchy as they are from anarchy, in effect arguing a triadic rather than a dyadic conception of structural ordering principles. The existence of such arrangements bears directly on the question of global-scale alternatives to anarchy: it raises the possibility that the security-appropriate form of world nuclear governance may be something quite different from the simple projection of the statist hierarchical form to universal scope. Finally, this points to the need for a reexamination of liberal and republican concepts and arrangements as partial answers, rather than full alternatives, to realism. It also raises the possibility that, at the broadest and most important grade of security-system theory, a realist-liberal hybrid might be most appropriate as a solution to realism's most important problem: providing security.