



## Nuclear War in the Rivalry Phase of the Modern World-System

**Robert A. Denemark**

*University of Delaware*

[denemark@udel.edu](mailto:denemark@udel.edu)

### Abstract

*Large-scale war is a world-system phenomenon of the rivalry phase. Such conflicts have once again become a concern, and nuclear weapons make these prospects especially dangerous. This is particularly problematic since several world-systems perspectives suggest the chances for war will be greatest in the period from 2030 to 2050. I review the logic of rivalry, the reasons for the endurance of nuclear weapons, old and new nuclear strategies, and the processes that may pose the greatest existential dangers. Chase-Dunn and Podobnik (1995) identified processes that militate both in favor of and in opposition to nuclear war, and I pay particular attention to the way in which world-systems developments that increase the likelihood of major war have persisted, while those that retard the chances for major war have diminished. These dangers suggest that it may be time to turn some of our attention to the dynamics of systemic war and nuclear weapons.*

**Keywords:** Hegemony, Nuclear weapons, Rivalry, War



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Students of world-systems analysis should reconsider the great power dynamics of the rivalry phase, which constitutes an existential threat given the resurrection of nuclear weaponry.<sup>1</sup> My argument proceeds in three parts. First, I briefly review the nature of conflict in the rivalry phase, and predictions regarding its timing. Second, I consider the persistence and impact of nuclear weapons, and the dangerous logic of nuclear confrontation as it evolved in the context of both old and new nuclear states. Finally, I consider the set of processes that influence the chances for nuclear war as outlined by Chase-Dunn and Podobnik in the very first volume of this journal. I outline the manner in which the forces they identified as leading toward war have continued to develop, while those that might reduce the probability of conflict have weakened.

This formulation of the cycle of hegemony and rivalry, our possession of nuclear weapons for the first time during the rivalry phase, the return of unstable nuclear confrontation, the novel context presented by new nuclear powers, increased complexity, the decline of impediments to conflict, and the increase in global tension, suggest a new and more threatening global environment. Students of world-systems analysis have much to contribute to this analysis and should consider investing additional attention to these processes.

The question of systemic war dissipated in the wake of the dissolution of the USSR, the political consolidation and economic integration of the core, the neo-liberal neutering of the periphery, and China's non-confrontational transition strategy. Naïve pronouncements about the end of history, and models of limitless beneficial globalization, flowed from other academic quarters. But a series of tensions emerged from xenophobic plebiscites, populist electoral outcomes, attempts to disarticulate the global economy, and the use of nuclear threats by a resurgent Russia, a recalcitrant North Korea, and the current U.S. administration. Systemic war, including nuclear exchanges, no longer seem so unlikely.

I argue that from a world-systems perspective, the chances of nuclear conflict have increased, and will continue to do so as we move deeper into a period of systemic rivalry. In an important sense, the immediate future is more dangerous than the nuclear brinkmanship that emerged in the Cold War. While much of world-systems analysis has focused on the continuing plight of the periphery, under the circumstances it would make sense to undertake more of an effort to understand the dynamics of rivalry and nuclear conflict.

### **Hegemony and Rivalry**

The cycle that is often labeled 'hegemonic succession' is inaptly named. It would be more accurately referred to as a cycle of hegemony and rivalry. Hegemony was originally discussed by

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Wallerstein (1983) as the (relatively rare) outcome of a confluence of agricultural, industrial, and financial dominance. Operationally, however, hegemony presents as the unilateral ability to make the rules of the global game. This differs from ‘dominance’, which is simply the possession of the largest repository of power resources in any given system. There is always a dominant actor, but it is rare to possess sufficient dominance to be capable of global rule-making (Archer 2004). Hegemony also differs from unipolarity. The existence of a political opposition does not necessarily detract from the ability to make the rules. In 1945 the United States faced a hostile and powerful USSR, but its economic system set the global rules of the game that the Soviets had to accommodate, and that played a role in their demise. The United States also enjoyed obvious success in global cultural affairs where its arts and fashion faced no Soviet competition.

In political-military affairs, the bipolar nature of the system raised the most serious question about U.S. hegemony (see especially Wilkinson 1999). But U.S. hegemony can be seen in this area as well. Democracy, if not capitalism, was embraced as an ideal and even enshrined in the names of Soviet allies (i.e. Democratic Republic of Germany; Democratic Republic of Korea). The United States set the postwar agenda for security alliances, military aid, and nuclear weapons development. The Soviets followed in each case. Even U.S. nuclear strategy appeared to underpin Soviet deployment patterns and threat postures. As a result, I argue that the U.S. was hegemonic from 1945 forward, encompassing the entire effective history of nuclear weaponry.

There are numerous dating schemes for hegemony and rivalry. It is not as important for us to fix a specific date range for hegemonic decline as it is to recognize that the socio-political and economic systems of hegemony and rivalry will differ, and that the United States is now somewhere in the decline phase (Layne 2012).

### **Economic Hegemony and Rivalry**

Periods of hegemony are characterized by rule-driven systems of economic interaction. In the case of the post-World War II period, the system has been referred to as one of ‘embedded liberalism’ (Ruggie 1982). The ideological drive to craft a ‘free market’ system was serious, but the lessons of the great depression illustrated that not every facet of the economy could be free if the economic system itself was to remain viable. Disemployment and other serious dislocations were driven by unstable speculative processes in the monetary and financial sectors, and so those would be removed from market determination. The global monetary system was to feature fixed exchange rates, while financial systems were to be ring-fenced by national boundaries. Only trade was to be free, because it was hoped that the market would provide growth, efficiency, and stability. Free trade is often part of economic systems during periods of hegemony (Krasner 1976; Reuveny and Thompson 2009).

Periods of rivalry are characterized by uncoordinated, individual state-led actions designed to foster economic development and competition. Mercantilists view wealth as zero-sum in nature, which has the effect of making state actors view the world in competitive and not cooperative terms. There is no perceived separation between competition in the economic and political-military realms. Each is viewed as part of the security regime. Policies that do not look like they are sufficiently competitive, or that focus on cooperative responses, are jettisoned in favor of those that appear to advantage one state above others. An emphasis on the inflow of capital in its most simplified form is often the litmus test for acceptable policies. Free trade is rarely in evidence.

The result is a system of competitive states seeking to profit from a structure that often requires, but will almost never provide, the transnational institutions needed to keep the economy together. The best example of this was the inter-war monetary system. Advanced states wanted to fight unemployment by increasing exports and decreasing imports. Tariffs were employed to reduce imports while currency devaluation was used to artificially reduce the cost of export goods. The problem, of course, is that reciprocal tariffs were levied and competitive devaluation employed. The result was a system where trade was unavailable to help achieve economies of scale, and currency devaluations produced economic distortions without price advantages. A great depression followed.

### **Political-Military Hegemony and Rivalry**

The politics of hegemony is generally the politics of interdependence. Rule-driven stability facilitates interaction. The longer various factors of production easily cross borders, the more states come to specialize in goods that require inputs that originate in other states. But the result is more than just mutual sensitivity or vulnerability. As more 'foreign' interaction is facilitated, it is viewed as less threatening and less in need of restrictions. Groups with transnational interests are able to pursue their activities outside the control of the state's various offices for the coordination of 'foreign' interaction. Such pursuits become socially legitimate as well. In the 1920s and 1930s those who imported goods into the United States were viewed essentially as foreign agents who lacked a concern for the well-being of their country (Schattschneider 1935). Protectionism was considered natural. In the post-war period, such views were reversed. As perceptions of well-being were no longer linked to the military power of one state versus another, the idea that security could only be provided by force, or that weapons had much utility in helping to acquire what individuals and groups wanted, began to decline. By the 1970s these 'interdependence' arguments were challenging the old threat-centric 'realist' conception of international politics (see especially Keohane and Nye 1977).

Military power was changing as well. In the 1950s and early 1960s the United States trusted that nuclear weapons could be used to reduce defense costs. It was hoped that costly troops, and

material support for them, could be replaced by a small arsenal of weapons of mass destruction. This turned out to be false exactly because conflict in the period of hegemony is constrained by the existence of a single actor of unassailable strength. During periods of hegemony we find little direct confrontation by large armies, and more violence of a generally low-level nature. National liberation movements using guerrilla tactics, terrorism (both by and against states), and covert intervention, are typical forms of violence in a period of hegemony. The utility of nuclear weapons is limited in such contexts.

In the period of rivalry, however, military confrontation emerges on a far grander scale. Multiple large polities work to consolidate their hold on their domestic systems, often through an enhancement of the mechanisms of fostering nationalism, and a strengthening the cult of the state that venerates order and the forces of social control. This increases the likelihood of both generating support for war and being well prepared for it. Competing great powers offer different visions of the important issues of the day. Forms of order or different concerns will be prioritized by different great powers. Some have been in control of the system and seek to defend their status quo advantages, while others will wish to loosen the reigns of existing global organization or replace it altogether. The organizations that were formed during the previous period will suddenly be identified as unsuited to various national interests, or too expensive to maintain. Global fragmentation may release tension in the short term, as states with incompatible interests no longer have to make accommodation with one another, but in the longer term the issues that generated the creation of those organizations will re-emerge.

Alliance-seeking behavior emerges as states coalesce over the issues they want to see addressed, or the actors they wish to see promoted. Alliance structures have the ability to promote instability as regional opponents split their allegiance among great powers. As a result, political instability in a given area has the potential to escalate to the great power level relatively quickly. At least one major theory of great power conflict, the 'Steps to War' position offered by Vasquez (2009), focuses on this process as the catalyst most likely to ensnare major powers in threat spirals that end in violence.

The military hardware best suited to periods of rivalry include expensive, technologically sophisticated weapons systems designed to penetrate the defenses of opposing states and elicit surrender. Arms racing is a dangerous process that increases the likelihood of war for several reasons. The need to monitor the opposition generates exaggerated apprehensions. Arms races are costly, and there is a strong incentive for those who see themselves as falling behind to fight from the position they hold and not wait for a further gap to develop. Though the tendency in arms racing is for numbers to increase, technical breakthroughs are possible and particularly threatening. The history of naval arms racing points to the development of Dreadnaughts in this regard. Nuclear

weapons had a similar impact. In both cases tension increased, and the attendant arms race was quickened. Technological breakthroughs do not end arms races, nor immediately lead to war, but they do increase tension (Intriligator and Brito 1984).

The politics of rivalry is the politics of multipolarity. Various states and their alliance structures are pitted against one another in an attempt to acquire the kind of power that constitutes hegemony. There remains an historic debate in the literature on international relations regarding the relative stability of bipolar and multipolar systems that merits review in the current context. In a bipolar world there is every chance that tension will spiral out of control as each pole focuses its animosity on a single opponent. There are no chances for cross-cutting issue alliances to form to broaden the range of peaceful interaction and offset the chance of settling into a system of persistent rivalry. The chance of destabilizing conflict increases. (See the original argument by Deutsch and Singer 1964).

Other scholars (originally, Waltz 1964), argue that the multiplicity of contenders increases the likelihood of violence. Instead of suffering from persistent uncertainty regarding others, a bipolar system allows for the careful focusing of monitoring efforts. Gains made by opponents can be more quickly recognized and balanced. Where uncertainty is reduced, errors and misperceptions are less likely. But in a multipolar system the number of actors increase the costs of monitoring, the likelihood that errors may emerge, fear of such errors, and concern for destabilizing alliance re-formations. Arguments that multipolarity might increase the chances for cooperation and peace make sense in a stable system, but in one that suffers from changing rivalry structures (which are the norm), the chance that tension will increase, not decrease, appears more likely (Rasler and Thompson 2010: 6674). From this perspective, multipolar systems are more dangerous in terms of the potential outbreak of great power war. The literature on systemic war from a world-systems perspective comes to similar conclusions (Chase-Dunn and Rubinson, 1977; Boswell, Sweat, and Brueggemann, 1989).

### **Systemic War in the Rivalry Phase**

Several scholars attempted to understand when large-scale violence might emerge in the period of systemic rivalry. Although the specific processes by which systemic violence will recur differs among of these perspectives, what is remarkable is that they all predict that the chances of large-scale conflict, likely led by core powers, would reach its zenith in a relatively narrow band of twenty years between 2030 and 2050 (Pollins 1996).

Wallerstein (1989) saw systemic war as furthest off, warning of a high probability of conflict around the year 2050. He suggested that war would likely emerge as a result of the decline of the United States and a subsequent struggle for power among competitors. This period will be all the more dangerous because Wallerstein also saw the potential for an end of the long period of global

growth he suggested would emerge around the end of the century, and last for about three decades. This period of growth could be capitalism's last, as the system's ability to continue to generate wealth will begin to reach some social limits.

Arrighi (1994) offered a different analysis. He argued that major power wars are most likely to emerge in the context of an over-accumulation crisis when declining returns to production and trade drive funds into financial markets. Hence, war is associated with downturn and the decline of each major system leader, which will generate increasing interstate competition, tension, and war. Arrighi provides no specific prediction regarding time, but a quick extrapolation of his timeline (1994: 364, Table 10) shows the years 2030 to 2040 are most prone to systemic conflict.

Modelski and Thompson (1996) suggested that conditions conducive to global war will emerge about 2030. Their prediction rests on a model of global interaction in which dual fifty to sixty year-long Kondratieff waves (K-waves) drive a four-stage long cycle of political leadership. Each cycle is punctuated by a 'macrodecision phase' (usually warfare, though the peaceful end of the Cold War suggests the need for a range of outcomes), following the peak of a K-wave. The 'macrodecision' is likely to create the innovations that initiate a second K-wave. Modelski and Thompson saw a competition for systemic leadership between a rising global power (likely allied with the former system leader), and a rising regional power (likely the old leader's historic opponent), as more apt to be the actual cause of war than competition for territory and resources.

Joshua Goldstein (1988) supports Modelski and Thompson's analysis with his finding that systemic violence is most likely during the upswing of economic cycles. It is the upswing that provides the resources necessary to arm and fight, while simultaneously increasing competition among nation-states for territory and resources. Goldstein calculated a 'war peak' for about 2030.

As the post-Cold War world-system stabilized under renewed U.S. leadership, the attention of scholars turned elsewhere. But U.S. leadership has broken down, and renewed global tensions suggest that the implications of these analyses need to be reconsidered. This is especially important given the resurrection of nuclear threats.

### **Nuclear Weapons**

Nuclear weapons constitute something new in world-system history. Weapons systems whose widespread use has a good chance of destroying all human life may alter the dynamics of systemic violence in a perverse manner. They change none of the systemic dynamics that enhance the likelihood of violence, while their destructive power may actually be an incentive to ignore the irrationality of their use lest others sense an advantage in striking first. These calculations will not be uniform across periods of hegemony and rivalry. To understand those differences, I review the fundamental dynamics of nuclear weapons, first in their Cold War context, and then as they have evolved in the current period. I then offer an analysis of the dynamics of hegemony and rivalry

that leads to the unfortunate conclusion that the oncoming period may generate a far more serious existential threat.

At several times in the past there were weapons systems introduced that were considered too terrible for humans to deploy. Greek fire, crossbows, poison gas, and aerial bombardment were all considered weapons of terror that should never be used, but all were used despite the logic of inevitable retaliation, or efforts to outlaw them altogether. Nuclear weapons are different. There is ample evidence to suggest nuclear war is not winnable, and that a full-scale nuclear exchange is not survivable. Whether it is nuclear winter, radiation dispersal, ozone depletion, or any of a series of geological disasters (earthquakes, tsunamis) that might be generated by novel targeting strategies, the results would undermine the physical foundations of human life on a planetary scale.

Unilateral possession of nuclear technology cemented the U.S. hegemonic position in 1945. No other state had mobilized scientific resources on so vast a scale, and nuclear technology appeared to promise military dominance without the need for the continued social and economic dislocations of maintaining large armies. But weapons are only useful in certain contexts. The threat of nuclear annihilation did not deter national or revolutionary movements, and so efforts to undercut U.S. hegemony would focus on those types of activities. On August 29, 1949, the USSR tested its first successful fission weapon, and the danger of direct nuclear confrontation emerged.

Fueled by Cold War hysteria, the first response of the United States was to search for domestic traitors, and then continue to threaten 'massive retaliation' at any sufficient provocation. As the Soviets built more nuclear weapons and developed the ability to deliver them to U.S. soil, the dynamics would change. Instead of building weapons for defense (defined as the ability to intervene against a physical attack), we now built weapons for deterrence (defined as the hope of stopping an attack by threatening unacceptable *post hoc* retaliation). The best we might hope for was that our doomsday weapons would deter their doomsday weapons. (For the historical progression of the literature on deterrence see Brodie 1959; Jervis 1979; and Paul et al. 2009.)

This logic was never popularly well understood, and its politicization pushed honesty and accuracy well away from public debate. John Kennedy campaigned on a platform that the Republicans had allowed a 'missile gap' to develop that threatened U.S. security. Once in power, Kennedy's administration moved away from 'massive retaliation' with its emphasis on simplistic measures like raw numbers of missiles and adopted instead a policy of 'flexible response' that called for the recreation of conventional military capabilities.

Flexible response acknowledged, if unofficially, a nuclear stalemate. The development of an invulnerable second-strike capacity guaranteed that unacceptable damage would be inflicted upon any state that used nuclear weapons first. This was the idea of Mutual Assured Destruction (MAD), which has some disturbing implications. The simple creation of an invulnerable second strike was

never adopted as policy given the uncertainty inherent in strategic interactions. First, dominance (defined as having far more weapons), might still matter to third parties, to an opponent who believes they have the technical wherewithal to deliver a disarming first strike, or who seeks to develop weapons systems that might someday have the capacity to do so. Second, any nuclear arms race would be expensive and perpetual. The logic of nuclear deterrence could be characterized by the phrase ‘he might, so I should, so he will, so I must’ (following Schelling 1966). The result of such a race is itself destabilizing for a variety of reasons. Arms racing increases tension, uncertainty, and the chances for war (Intriligator and Brito 1984). Arms races are particularly expensive, leading to significant social dislocations. Building great numbers of nuclear weapons also increases the likelihood of accident, unauthorized use, or theft (Willrich and Taylor 1974; Tiwari and Gray nd.) Ellsberg (2017) also warns scholars not to reify the MAD philosophy. First strike and first use strategies were always a part of U.S. nuclear strategy. This increased the likelihood of a nuclear exchange through the turbulent era of the Cold War and will inevitably do so again. The MAD perspective promised ‘stable deterrence’ while generating a dynamic that was only nominally stable.

Third, an interesting moral argument emerges. The logic of MAD suggests that nuclear weapons will be used solely for deterrent purposes. Deterrence is a strategy of retaliation that relies on the ability to destroy elements of society deemed so precious that no state would take such a risk. Weapons are not aimed at military targets, but at the seat of government, population centers, the economy, and culture. These are ‘counter-value’ targets that represent the life of a state. The idea that the military power of one country should be aimed solely at non-combatants is one problem area. More importantly, the idea that stable deterrence is maintained with these targets in mind requires certain technical requisites. Weapons cannot be too accurate, since the ability to disarm the opponent with a first strike is antithetical to the MAD philosophy. Hence, in a MAD world, billions should be spent on weapons that are not particularly accurate, and therefore cannot be used for a first strike. Populations should not be protected, since that would undermine the ability to retaliate after being struck first. Hence civil defense is an offensive weapon, as is any plan to develop systems that might defend against a nuclear strike. The idea that we would never need the ability to defend against a rogue missile or bomb seems more like an invitation to disaster than a way of avoiding one. MAD may well be characterized as a strategy of futility, or perhaps outright surrender to some devastating future catastrophe.

During the Reagan Administration the specter of a new strategy ‘nuclear utilization and target selection’ (NUTS) emerged with the aim of making nuclear war a viable option, better securing the U.S. population, and forcing the USSR to compete in the areas of technology formation and fiscal insobriety, where the United States had the advantage. To pursue this strategy the United

States needed to develop and build more, and more accurate, weapons to help assure that it could eviscerate the USSR, its well-protected command and control systems, and its state apparatus. The United States also moved to upgrade its own protection of command and control systems. Finally, a system of anti-missile defense (Reagan's 'Star Wars' program), was prioritized, ostensibly so that rogue missiles might be stopped, and U.S. soft targets (cities) could be defended. This was joined by enhanced civil defense initiatives. U.S. citizens were asked to review urban evacuation plans, consider local protection from nuclear blasts (like swimming pools), and enter a record as to where to have their mail forwarded in case they had to relocate. All of this was paired with enhanced 'use' rhetoric to signal to both the domestic population and the Soviets that the United States was adopting a new, more 'victory-oriented' strategy. Emblematic of this change was the famous 'open microphone' incident of August 11, 1984 when Reagan 'inadvertently' announced that U.S. nuclear missiles had just been launched. (Soviet military planners used such actions to increase their voice in the Kremlin and put the USSR on a higher war footing.)

One of the problems with this initiative is that the weapons and strategies required for NUTS are exactly those that must not be undertaken from the perspective of Mutual Assured Destruction. These changes, allegedly designed to move the United States from a poor strategy to a superior one, signal the MAD strategist that the United States is planning a pre-emptive war. The most rational response from the target is to strike first, before its weapons become unusable. This is why President Reagan offered to give the USSR all the highly advanced and top secret 'Star Wars' technology immediately upon its development, and for free. This offer was made quite publicly during the presidential debate of October 21, 1984 (Commission on Presidential Debates nd.).

As it happened, the USSR could not keep up the economic or technical pace. This, along with the Soviet system's other challenges, led to its demise. The cost to the United States was also astronomical. It had gone (for various reasons) from the largest creditor nation in history, to the largest debtor nation in history, in a little over 7 years. As one student of U.S. foreign policy said, 'we forced the Soviets to their knees, where we met them, on our knees' (James K. Oliver, personal communication, October 1997).

The end of the Cold War led to a reduction in fear of great power conflict. The United States worked to denormalize nuclear weapons use for any circumstance, and non-proliferation became the focus of subsequent administrations and academic analysis. The 2017 Nobel Peace Prize went to the organization that generated a treaty with 128 signatures to denuclearize. U.S. nuclear systems and strategy were ignored in government, the military, and think tanks (Bracken 2012). These efforts were unsuccessful. States that possessed nuclear weapons during the Cold War were concerned with denuclearization in an uncertain world. In the 1990s Russia upgraded nuclear arms as part of Putin's nationalist agenda. He threatened their use as Europe protested his invasion of

Crimea (Freeman 2014). The United States was placed in the position of having to reassert coverage of Europe under its 'nuclear umbrella.' China's 300 weapons, considered sufficient for deterrence purposes, were being upgraded in great secrecy (Bracken 2012:243). Britain and France modernized their nuclear arsenals to maintain their grip on great power status. Threats among these states were moving toward a resumption of Cold War era deterrence strategies.

With the Trump Administration there is a powerful push to modernize U.S. nuclear forces so as to be 'second to none.' This modernization is an important pillar in the *National Security Strategy of the United States of America* published in December 2017. Not only are U.S. weapons systems to be upgraded and expanded, but their use is officially sanctioned against non-nuclear threats, raising the contradictions inherent in the 1990s NUTS strategy, and perhaps the even earlier policy of "massive retaliation" as well (*National Security Strategy* 2017:30).

Nuclear weapons, now nearly 75 years old, are not alone among weapons of mass destruction (WMDs). Chemical and biological weapons, along with new cyber and nanotechnologies, may also generate massive casualties, and perhaps leave room for a meaningful victory as well. But none of these weapons carries the onus of being a last resort or ultimate deterrent. Nuclear weapons remain unique in this regard. For smaller states they also afford significant status and security against direct great power intervention. Finally, unlike newer technology, nuclear weapons are possessed (or within reach) of many polities that could not afford other cutting edge WMDs. Given recent expansions of nuclear forces, a promised massive U.S. effort, and the fact that the start of the war peak predicted by the scholars we reviewed is now only 12 years away, nuclear weapons are likely to remain unfortunately relevant.

Added to this is the possession of nuclear weapons by several regional powers. India, Pakistan, Israel, and North Korea adopted nuclear weapons for reasons that differ significantly from Cold War great powers. Their addition to the nuclear club increases the range of threats and strategies available. This 'Second Nuclear Age' brings with it several major challenges, and each may increase instability.

Each of the new nuclear powers possesses a smaller arsenal that is vulnerable to pre-emption. Each is engaged in long-term rivalries that continue to generate periodic crises. Some suffer from weak internal institutions and questionable levels of technocratic competence. These raise issues of whether new powers possess sufficient safeguards against runaway strategies, accidental, or unauthorized use (Rovner 2012:18).

These new actors face new incentives. The bipolar discipline that might have been counted upon with nuclear powers like Britain or France is gone (Shaw 2013:39). Nuclear technology, and the wherewithal to deliver it, is easier to acquire (Bracken 2012:118). Experience has shown that even second-strike invulnerability is no guarantee against conventional attack, and hence may

more readily generate a nuclear response. Most importantly, newer nuclear states have a far greater incentive than more established powers to remain obscure regarding their intentions (Yoshihara and Holmes 2012:228). Israel will not acknowledge its longstanding nuclear capacity, much less signal the parameters of its intent. Other new nuclear powers fear pre-emption and are advantaged by opaque positions or deception. The chance for fatal misperception is maximized under such circumstances.

The new multilateral context generates infinitely greater complexity than the bipolar or tripolar Cold War context. Superior strength may no longer suggest victory in a system where one power may seek to bait its enemies to engage in hostilities with one another (Bracken 2012:106-9). The chances for unintended spillover consequences of any given initiative increases. Saddam Hussein argued after capture that many of his statements and actions regarding WMDs were part of a long-term effort to deter Iran. That they inflamed the United States, and led to a costly war that in the end advantaged Iran, should not be ignored (Bracken 2012:112-3). Much the same might be observed when India seeks to deter Pakistan, but the result is perceived as a threat to China, or when Israel's position drives nuclear efforts in Iran.

New strategies must also be considered. In an unfortunately self-fulfilling manner, the drive to acquire nuclear weapons for deterrence purposes may starve conventional forces of funding, decreasing readiness, inviting conventional attack, and leaving few options but to employ a nuclear response (Bracken 2012:122). Vulnerability may render pre-emption and launch-on-warning strategies far more rational (Yoshihara and Holmes 2012:231). New proliferation strategies, like providing weapons or technology to allies, or even to non-state actors, portend new sources of instability (Rovner 2012:21). Narang analyses the experience of new nuclear powers and identifies 3 major strategies. Among them, the traditional "assured retaliation" option does poorly at deterring conventional attack. A more dangerous but effective strategy that he identifies as "catalytic" is specifically designed to draw great powers into regional disputes on behalf of allies, or in the hope of maintaining peace (Narang 2014:307). Regional rivalries constitute the most dangerous contexts, and major powers may escalate conflict in areas where they lack effective control over nuclear options (Yoshihara and Holmes 2012:233; Bracken 2012:243).

The final strategy Narang identifies is "asymmetric escalation" in which a state threatens first use of nuclear weapons. Narang's analyses (both case studies and statistical), show that this level of increased aggression proves best at deterring others, but raises "acute concerns" about unauthorized and accidental use, especially during crises, given the need to decentralize command and control given smaller arsenals (Narang 2014:307). Put directly, the best strategy for deterring attack is also the most dangerous. Taken together, the onset of the period of rivalry, analyses of likely periods of conflict, the persistence of nuclear weapons, and the instability introduced by new

nuclear states and a multipolar context, suggest a need to consider contemporary dynamics in greater detail.

### **Processes that Influence the Chances of Nuclear War**

In the first volume of this journal, Christopher Chase-Dunn and Bruce Podobnik (1995) took an inventory of processes that were suggested to lead both toward and away from large scale war. K-wave dynamics, hegemonic decline, population pressure, and growing inequality militated in favor of war, while economic interdependence, global political integration, disarmament, and the destructiveness of existing weaponry, militated against war. Contemporary review suggests that the forces favoring war have advanced, while the forces arrayed against the likelihood of war have weakened in the context of a period of systemic rivalry. We may expect such weakening to continue.

The scholarly work on systemic war that emerged in the late 1980s and early 1990s was productive but was pursued by fewer authors as global conflict settled into the form that might have been expected during a period of hegemony: low-intensity violence by sub-national actors. The Cold War had so dominated our sense of why there was tension in the world-system that its peaceful end, something few predicted, suggested that global war might be a phenomenon of the past. But below the surface, the system-level forces militating toward war continued to play themselves out. K-wave dynamics continue, and hegemonic decline became obvious even in the wake of Soviet dissolution (Modelski and Thompson 1996; Modelski 1999; Boswell 1999). The Cold War imposed a form of discipline over global conflict. Hegemonic power dictated care on both 'sides', and the United States and USSR avoided any direct engagement. With hegemony in decline, we should expect to see more independent action among both great and regional powers.

Demographic pressure continues to draw upon scarce resources and increasingly fragile ecosystems (Su 1999). Resource competition, as exemplified by the Chinese presence in Africa, portend a new imperialism and imperialist rivalry. And the ecological threat now appears to have reached a tipping point such that decline may be self-sustaining.

Inequality also emerged as a more serious political problem. Driven by the apparent victory of neo-liberalism, the logic of accumulation led to widened margins and further polarization among semi-peripheral and peripheral states (Karataşlı, 2017; Karataşlı and Kumral 2017). In core states, internal polarization has generated everything from 'Occupy' movements to radical xenophobia and proto-fascism (Nunn, 2015; 2016). Inequality is rising both domestically and globally and is likely to increase even more as the middle and working classes of the advanced countries hollow out. Peripheral countries suffer further dislocations. These processes will generate significant future upheaval.

More importantly for the purposes of this work, the phenomena that Chase-Dunn and Podobnik suggested would help to reduce the probability of future systemic war are weakening. These include economic interdependence, global political integration, disarmament, and the destructiveness of modern weaponry.

### **Global Economic Interdependence**

Economic interdependence and its alter ego 'globalization' are the obvious outcomes of the sort of liberal global system predicted in periods of hegemony. They were welcomed with great fanfare. The concept of globalization rose in popular parlance to mean that the liberal social, political, and economic system of the United States would dominate the world. This was assumed to be what everyone preferred. But globalization generates both winners and losers, and the losers grew in number as a direct reflection of the way in which the liberal system rewards capital and expertise, held by relatively few, and not labor or most natural resources, held by relatively many. Anti-Globalization movements emerged in peripheral areas (as in Mexico) where indigenous peoples were being further impoverished by free trade agreements. It grew as local labor and environmental groups suffered from the effects of economic liberalization and emerged as a global force with movements like the Global Social Forum. The impact of free markets, as liberal scholars themselves agree, is destructive. The usual 'solution' offered is to use extra income generated by the winners to compensate the losers, but this is ineffective at best, and has become tenuous as winners use political means to sequester more and more available surplus.

For some time, the ideological legitimacy of liberal economics made it easy to paint the losers as undeserving. But over time, as the number of losers grew and as their ability to organize increased, globalization was identified as a decidedly double-edged sword. Inequality in core states worsened with pervasive off-shoring and policies designed to build a local precariat (Arrighi 1994:148). Financial dislocations hobbled large employers in sectors like construction. Popular blame for the downturn could be turned toward immigrants forced from their homes by increased economic dislocations, or by the military solutions sought by local dictators or insecure great powers. Globalization would turn from liberal dream to populist nightmare, and states were mobilized by new coalitions and electoral pressures to focus on protecting and enhancing their relative positions through actions that were more likely to reduce their security and well-being. Friedman and Friedman (2013) even argue that "globalization" is the discourse of hegemonic crisis.

Transnational capital may not need to oppose such movements. Capital at the commanding heights of the global economy benefits from open borders, but openness is not necessary for generating profits. When national governments are co-opted to 'do something' about globalization, it may be easier for transnational capital to buy off the political elite for reduced taxes, maintain

only essential openness (often financial), diversify their organizations to profit from processes like tax arbitrage, or simply create nominally separate national corporate entities and bet on all sides in both war and peace. This ability is hardly new, and was clearly illustrated by organizations like Ford, General Motors, IBM, and Coca Cola that profited from providing goods and services to both sides during the Second World War (Mayer 2016).

At levels well below the commanding heights, business harmed by cross-border competition, and the workers they employ, can be expected to support mercantilist efforts toward closure of the economy (Rogowski 1989). Mercantilism was a term coined by Adam Smith to provide a handle for the various interventionist policies adopted by states in pursuit of economic growth. But mercantilism is far broader than that, being first and foremost an economic strategy for creating and unifying states themselves. In the 18<sup>th</sup> century, late industrializers like France and Germany were wholly unsympathetic to the arguments that Smith made regarding the transcendental merits of free trade. Friedrich List, a German political economist writing in the 1880s, suggested that free trade was not a liberal strategy at all, but simply the mercantilist strategy of those actors who found themselves momentarily more productive and efficient than others (List 1885). Once that productivity and efficiency dissipate, policy preferences should revert to the more obviously protective elements that mercantilism has long been known for. A variety of such measures, from withdrawal from trade agreements to more competitive monetary policies, promise still more state-led economic competition and tension.

### **Global Political Integration**

Susan Strange, one of the founders of modern study of the global political economy, argued that since states create problems that states cannot solve, solutions must include an increase in coordination and global political integration (see Lawton et al. 2000). Murphy (1994) outlined this process with regard to the creation of the great ‘Congress’ system of the early 19<sup>th</sup> century that saw multiple sovereigns, along with large retinues of advisors, meet together to deal with global problems. A large number of global organizations were founded in this manner. Many, like the ILO, were created to deal with problems that no state could conquer alone, but that posed a problem for the state system. Global organizations hold out the hope that joint problems might give rise to joint solutions, and not simply to national-level competition that promises little more than temporary local avoidance. But institutions are not always the panacea that they might be. Stasis may be generated by representative institutions, and friction develops as more states attempt to coordinate action.

Representative organizations are often constituted as democratic in nature, and this is especially the case when they are created by dominant powers who believe they have a natural majority, the ability to generate such a majority, or who organize voting rights in their favor. This

veneer of popular participation affords legitimacy and earns hegemonic powers the right to claim that they are creating benign rules to benefit everyone (e.g. Ikenberry 2001). But the ‘solutions’ offered are likely to be unevenly useful, and as List argued, liberal rules are championed by those who will benefit, and quickly abandoned once they have lost that advantage. International organizational outputs are similar in nature. Those global organizations created after the Second World War were crafted in opposition to the Soviet Bloc, failed to serve the interests of the majority of the population of the planet living in the periphery, and came more and more to be identified as impediments to newer rising powers that favored change.

Such outcomes are predicted by a variety of (otherwise incompatible) analytics. As an example, we might note that from a classical realist perspective in the study of international relations, E.H. Carr (1939) sought to explain the failure of both the British, and existing international organizations, to maintain the post-World War I peace. He focused much of his criticism on the overestimation of the unity of purpose of the international community. The result was a *status quo* bias in the international organizations that quickly came to be resented and discounted. From the very different analytical starting-point of public choice analysis, Mancur Olson argued that once institutions were created they would fall prey to special interests. The longer they survived, the more likely they were to be captured by the best organized and funded interests and used to support those powerful voices at the cost of the majority (Olson 1982). One of the most recent and insightful analyses of multilateralism from a constructivist scholar making the ‘practice turn,’ concludes that multilateralism (and the organizations that host or issue from it) are created by, and replicate, the existing power structure in the global system. For Vincent Pouliot (2016), participation in multilateral interaction is tantamount to having a seat at the global governing table. But organizational members establish their own operational norms, and over time those with sufficient power resources to influence policy outcomes learn how to do so in an effective manner. Each of these very different perspectives predicts similar limits to the utility of global political integration.

Fausett and Volgy make a different argument. They suggest that when new states join international organizations it is as likely to increase tension as to decrease it. The broader and more inclusive the organizations become, the more they bring into contact states that have not had cause to interact with one another. Differences of opinion that would have gone completely unnoticed suddenly become the stuff of daily interaction. Decisions that might have been made independently must often be considered at the regional or global level, where different preferences become impediments to cooperative interaction (Fausett and Volgy 2010). Such differences will sharpen in periods of rivalry.

**Disarmament**

The weakest link in the list of phenomena that Chase-Dunn and Podobnik identify as militating against great power war is disarmament. They give this matter a single paragraph, no doubt to recognize the advances made in banning nuclear tests, the militarization of outer-space, reducing stockpiles of chemical and biological weapons, and in prohibiting the building of certain classes of destabilizing weapons systems. These advances are significant. They are designed to safeguard the environment, keep arms races from leaking into areas where they would do no actor any good, or provide the specter of imminent destabilization. Chase-Dunn and Pobodnik nonetheless concluded that disarmament is only moderately helpful because those who consider giving up WMDs fear they might find themselves in need of these tools and are likely to avoid or ignore agreements as a result (Chase-Dunn and Podobnik 1995:335). Rivalry will increase tension and disarmament may prove itself to be useful in delaying, not eradicating, violence.

**Destructiveness and Irrationality**

The destructiveness of nuclear weapons is also identified by Chase-Dunn and Pobodnik as a mechanism that militates against systemic war. It would be irrational to use nuclear weapons, and pronouncements of this sort issue regularly from the highest levels. The technical specifics are definitive and depressing. But there are five reasons that the irrationality of using such destructive weapons is not sufficient to stop their use, and all seem to be enhanced during periods of rivalry. First, the nature of nuclear confrontation is highly contested. We noted above that during the last round of Cold War strategy development, the Reagan Administration adopted the nuclear war-fighting orientation of NUTS. This increased tension and brought the USSR closer to adopting a first strike. The current lack of well-considered strategy may lead to even quicker escalation as was illustrated in the 1983 U.S. simulation (using cabinet level officials and members of the U.S. Joint Chiefs), which quickly led to the use of nuclear weapons (Bracken 2012:84-90). New nuclear powers may be even less hesitant to use their weapons. Misperception, complexity, new actors, pronouncements about how each actor will be vulnerable to none (which are meaningless, if not destabilizing, in a MAD world), and the electoral need to 'look tough,' all militate toward the rebirth of a system of peculiarly high levels of tension and instability.

A second reason that the destructiveness of nuclear weapons might not help us avoid war, as it did in the past, rests with the tendency toward rearmament. Policies toward rearmament are usually the opening moves of an arms race, with all their attendant tension and instability. More critically, rearmament, typical of rivalry, signals a breakdown of trust and peaceful relations. New nuclear weapons are likely to prove more capable, or perhaps given the technology, more destabilizing than those that had been willingly abandoned.

A third concern about the ability of the destructiveness of weapons to deter war considers serious accidents and the diversion of nuclear materials. From the 1950s, when reporting began, to the mid-1980s, when the United States restricted such information, we note somewhere between 40 and 140 accidents with nuclear weapons. (The range is accounted for by alternative definitions of ‘accident.’) Nuclear bombs were involved in crashes during attempted landings (often in Albuquerque, which is to this day a joint civil/military airport); they fell from the sky when involved in mid-air collisions; they were dropped when aircraft experienced structural failure, or they simply fell by accident. In North Carolina a bomb fell when its aircraft disintegrated in mid-air. Five of six safeguards failed, and nuclear detonation was avoided “by only a single switch” (Tiwari and Gray nd.). In South Carolina an unarmed bomb was accidentally jettisoned from an aircraft and the conventional core of the weapon left a crater about 60 feet in diameter and 25 feet deep. In Palomares, Spain, a major tract of land is still off-limits due to radiation from nuclear weapons that fell from an aircraft after a refueling accident in 1966 (Hadden 2012). Weapons sunk to the bottom of the ocean when dropped from aircraft or are entombed with submarines. In 2007 a lack of appropriate safety in the transportation and guarding of nuclear weapons led to the firing of the Secretary of the Air Force and the Air Force Chief of Staff. A former Secretary of Defense was tasked with reporting on the incident and overall nuclear strategy, and suggested, among other things, that the Defense Department engage in a re-education process regarding nuclear weapons as even the most basic information was lacking (*Report of the Secretary of Defense* 2008). But Perrow (1984) argues that enhancing the complexity of technical systems, including those designed as ‘safeguards,’ may actually increase the likelihood of accident. Better training, more care, and enhanced technology are not effective when complexity escalates beyond a certain level.

Accidents are not only associated with the inadvertent release of weapons. They can be even more dangerous when they effect early warning systems. The United States has gone on high nuclear alert because of the rising of the moon, flocks of birds, and a bear almost caused a nuclear war by clawing through a fence at an airbase where the perimeter alert has been cross-wired with the launch alert (Tiwari and Gray nd.). While the early warning systems of the most technically sophisticated (and least fiscally challenged) actors might be expected to have improved over time, we cannot be certain of the new nuclear powers. States that cannot assure the invulnerability of their weapons may well adopt a ‘launch-on-warning’ policy that would make warning system errors catastrophic.

Diversion is also a concern. As early as 1974, Willrich and Taylor identified a major problem at the heart of nuclear security. Weapons builders argued that it was easy enough to build a nuclear bomb, but difficult to acquire material to fuel it. Students of the fuel cycle argued that it was easy

enough to acquire weapons-grade nuclear material, but difficult to engineer a bomb. Neither proved as major a restriction as was originally hoped.

With the downfall of the USSR there was a great deal of concern with illicit nuclear materials coming to market, but the problem predates this. In an effort to assure Pakistani assistance against the USSR in Afghanistan, the United States granted a waiver of proliferation penalties. By 1987 Pakistan had produced enough highly enriched uranium to build nuclear weapons, and by the 1990s there was a Pakistani-led nuclear black market (Kimball 2004). And China has long been implicated for its “cavalier attitude to selling nuclear technologies” (Bracken 2012:233).

Fourth, we face the problem of irrationality. Karl Deutsch argued in the mid-1970s that most national leaders were rational individuals, though not all. The problem was that as nuclear weapons proliferated, the set of irrational leaders and the set of nuclear powers might eventually come to overlap. His conclusion was that when this happened, “the plutonium would hit the fan” (Karl Deutsch, Lecture, Purdue University, 1977). This insight would seem far-fetched, if not wholly irrelevant, were it not for the tension currently being created by North Korea’s acquisition of nuclear weapons, its famously erratic current leader, tests of both weapons and delivery systems, and its constant threats to use nuclear weapons against both regional opponents and the United States. And the immoderate response it has elicited.

Rationality is also defined differently in great powers seeking to deter nuclear attack and new nuclear powers seeking status and security against a broader range of threats. The same rationality that may assure peace in one context may lead to war in another.

It may also be the case that the entire logic of nuclear interaction suffers from serious logical flaws. It is irrational to use nuclear weapons, but it is vital to mount a credible threat to do so under certain circumstances. This is referred to as ‘the rationality of irrationality.’ That threat becomes untenable if it is offered with too much specificity, so it is rational to remain obscure regarding the conditions under which nuclear weapons would be used. As a result, uncertainty builds and fear of first use leads to a variety of counterproductive strategies (i.e. pre-emption or launch-on-warning), that may increase the likelihood of nuclear war. That, of course, would be an irrational endpoint, so the logic of deterrence may be recursive, leaving our survival to an analytical foundation that tends toward the downright bizarre.

A fifth concern regarding the decline of the utility of destructiveness as an impediment to war concerns alliances. Rivalry signals increasing tension from alliance structures, or those who wish to remain outside those structures, in the periphery. Multipolar systems are those in which a variety of actors search for allies in their quest to enhance their strategic positions and offer the world a viable and popular vision of the future. Bipolarity led to friction in the periphery as two sides sought to acquire allies and undermine the position of their opponent. The famous ‘with us

or against us' positions of the United States and USSR increased tension globally. But this interaction was also fairly transparent, and even in places where violence erupted, the primary actors (the United States and USSR) never engaged in direct military action with one another. But just as a multipolar system might be more unstable among the poles themselves, it is likely to generate even more instability in the search for allies. Existing regional tensions will become more complex, the competition among competing poles is likely to lead to more fragmentation, and multiple contending great powers may not be as careful to avoid direct confrontation as were the United States and USSR. Some new power strategies suggest the use of nuclear threats specifically to draw great powers into regional conflicts. If regional conflict escalates, as it did recently in Syria, there is every chance that core powers will start to experience more situations that could bring them into direct military confrontation.

### Conclusion

Albert Bergesen argues that the great insights of world-systems analysis in the 1970s concerned core-periphery differentiation. World-systems analyses of the periphery went a long way toward debunking a variety of polemical myths and shined a light on one particular aspect of the nature of the modern world-system that desperately needed to be better understood. Now, he argues, we ought to turn our attention to other/newer matters that also require myths to be debunked and lights to be shined (2011; Suter and Bergesen 2018). Following his interpretation of the message of Andre Gunder Frank's last (posthumous) book, *ReOrienting the 19<sup>th</sup> Century* (2014), he suggests we turn some of our attention to strategic competition among powerful states. In a period of systemic rivalry, with the specter of nuclear weapons re-emerging, it makes sense to invest additional intellectual effort to understand the dynamics of contemporary conflict.

**About the Author:** Robert A. Denmark is professor of political science and international relations at the University of Delaware. His work concerns long-term global processes.

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