

Hegemonic Governance and Military Conflict:
An Empirical Analysis

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Abstract

Theories of hegemonic governance contend that the globe's most powerful state can act as a stabilizing force in the international system. This capstone addresses whether a hegemon's relative power share affects the level of military conflict experienced by the world. In this analysis, relative power is measured using the Composite Index of National Capability, a metric that averages six different dimensions of relative power related to demographics, economic strength, and military might. Conflict was measured with data from the Correlates of War project, which defines a conflict incident as a threat, display, or use of military force. Through regression analysis examining British hegemony from 1815-1914 and American hegemony from 1945-2000 it was discovered that there is a strong negative association between the hegemon's relative power and levels of military conflict in the international system. However, hegemonic deterrence is not just a function of capability. Statistical analysis shows that once hegemons have demonstrated their strength, the correlation between their power level and conflict in the system is much stronger. In fact, in the years before Britain and the United States demonstrated their strength, there appears to be no link between hegemonic power and conflict despite very high power capabilities. These results may indicate that while power is a necessary condition for effective hegemonic governance, a state must also be perceived as powerful and committed by other actors in the system.

I. Introduction

The field of international relations is replete with contentious debates over both theory and policy, but theories on hegemonic governance have elicited controversy from theoreticians and policymakers alike. There are several variants of hegemonic governance theories, including hegemonic stability, world systems theory, power transition theory, and long cycle theory. What united all these theories is that in one form or another they all claim that an assertive hegemon can act as a stabilizing force in the world. While the idea itself may be straightforward, it has complex ramifications for the nature of order in the international system. The idea also holds important consequences regarding the morality of hegemony itself. If hegemony does indeed produce such

beneficial effects for the world, then hegemonic stability theory lends some moral weight to the hegemon.

To research this question, I undertook a broad quantitative study that examined data from both the American and British hegemonic epochs. I hypothesized that hegemonic strength was inversely correlated with levels of armed conflict in the international system.

Using the data from the Correlates of War Project, I was able to perform a number of statistical analyses on my hypothesis. To measure hegemonic strength, I used the Composite Index of National Capability, a metric that averages together six different dimensions of relative power as a share of total power in the international system. I then matched this data with data cataloging all conflicts in the international system since 1815. I organized this data into five-year increments in order to make statistical analysis more feasible. Regression analysis of the data revealed that there was a statistically significant negative correlation between relative hegemonic power and conflict levels in the international system. Further statistical tests attempted to explore the causal mechanism behind the picture of hegemonic governance that was emerging. What these results revealed was that Britain and the United States engaged in more conflicts as a percent of total conflicts in the system during the years of rising hegemony than during the years of falling hegemony. Furthermore, the strong correlation evident when the period as a whole is examined disappears when the focus turns solely to the years of rising hegemony, or to years during which the hegemon did not play an active role in the international system. These results may indicate that a hegemon's raw power does not deter conflict unless other actors in the system see the deterrent as credible.

II. The State of the Literature

The genesis of this project lay in the realm of hegemonic stability theory, as an attempt to apply the insights derived from this old IPE warhorse to the realm of security studies. But my review of the literature revealed that the prism of hegemonic stability, was, while not an inaccurate way to view my endeavor, perhaps an incomplete one. The question of hegemony and military conflict is touched on by a number of other theoretical models, including power transition theory, long cycle theory, and world systems theory, and is also addressed through a more holistic historical approach by authors such as Watson and Kennedy.

In brief, there are a number of disparities between the four main theoretical systems, but the four are united in that they predict that the system's dominant state has an effect on the incidence of war or conflict. While predictions vary, it is also safe to state that all four theories agree that when the dominant state is powerful, at least *some* forms of conflict between *some* actors are less likely to occur. All four models have been empirically tested and at least partially vindicated. What does not exist is a consensus regarding how this hegemonic effect operates and how widespread the effect is, both in terms of which members of the system it effects and what types of conflict are effected. It is these questions that my own research seeks to address.

Realist Variants: Hegemonic Stability Theory

Hegemonic stability theory posits that the international system is more likely to remain stable when a single nation acts as the dominant power (Cohen 2008). Since the

theory's genesis in the 1970s, a substantial body of literature has emerged critiquing and expanding upon the original idea. A review of the literature reveals that hegemonic stability theory has been analyzed quite thoroughly from an economic perspective. It also reveals a potential for more research to be done examining the effect of hegemony on armed conflict in the international system.

The first building blocks of hegemonic stability theory date to 1973, when Charles Kindleberger proposed that economic disorder in the years between the First and Second World Wars could be attributed to the lack of a hegemon (Kindleberger 1973). Kindleberger's analysis raised some interesting questions for further study. Namely, to what extent was his analysis applicable to other historical epochs? Is the stabilizing effect created by hegemony quantifiable? And, perhaps most intriguingly, does this stabilizing effect extend beyond the realm of economics?

The scholarship of Robert Gilpin was instrumental in fleshing out hegemonic governance as a broader theoretical concept. In his 1981 work *War and Change in World Politics*, Gilpin argued that instability in the international system is inversely related to the extent of a hegemon's relative economic and military capabilities (Gilpin 1983). However, Gilpin's analysis has not gone unchallenged. David Lake argues that Gilpin overestimates the centrality of hegemony to international order (Lake 1993). While he believes that hegemonic stability theory still has important insights, it should not necessarily be regarded as the central stabilizing factor in the international system. The work of Kindleberger and Gilpin divided hegemonic stability theory into two distinct approaches – Kindleberger, as a liberal economist, focused primarily on the role of the

hegemon in providing collective goods contributing to economic stability. Gilpin, on the other hand, focuses much more on the security implications of hegemonic governance.

A number of scholars of international relations have followed Kindleberger's approach. Among the most influential work in this area was done by Keohane, Deudney, and Ikenberry. In his seminal text *After Hegemony*, Keohane argues that despite the relative decline of the United States, economic stability has endured because of the strength of the institutions the United States helped create (Keohane 1984). Deudney and Ikenberry expanded upon this analysis, arguing that hegemony alone cannot account for the current stability level of the international system (Deudney and Ikenberry 1999). Rather, it is just one among a number of factors contributing to stability. Co-binding security institutions, economic openness, and civic identity are among the other factors of importance in fostering stability. The arguments of Deudney and Ikenberry are logically persuasive, but would be served by greater empirical rigor.

Fortunately, other authors have stepped forward with their own more empirical research. In *The Limits of Hegemonic Stability Theory*, Duncan Snidal uses the tools of game theory to argue that cooperation does not necessarily decline with a hegemon's decline – it can even be enhanced under some conditions (Snidal 1985). Snidal's analysis is useful for demonstrating the logical feasibility of Keohane's, Deudney's and Ikenberry's arguments, even if his numerical models are ultimately somewhat arbitrary. And while the works of Deudney, Ikenberry, and Keohane are very important, they basically follow Kindleberger's path in their focus on international economics. It is also worth devoting a good deal of attention to the more security-focused studies of hegemonic stability theory that have been done.

Compared to the amount of scholarship focusing on the economic aspects of hegemonic stability theory, there is a relative dearth of research focusing on security implications, especially from an empirical perspective. This is an area where there is clearly room for new research. A number of scholars have addressed Gilpin's thesis that instability in the international system is inversely related to the extent of a hegemon's relative economic and military capabilities, but few have empirically tested it.

On a more positivist note, Spiezio performed one of the few test cases in his analysis of British hegemony from 1815 to 1939 (Spiezio 1990). Spiezio found that incidence of major war was inversely related to magnitude of hegemonic power, defined as a combination of military and economic capacity as a proportion of total capacity in the international system. The results also indicated that British hegemony was not the most important factor creating variation in the levels of international conflict. Another surprising anomaly was that hegemony appeared to account for more variation in frequency of all wars than in great power wars. Furthermore, Spiezio noticed a spike in conflict in the years when Britain was near its peak in terms of relative power. Thus, while Spiezio's work provided support Gilpin's basic hypothesis, it also called into question the centrality of hegemony in fostering stability. Spiezio's research, while very useful, left a lot of room for further analysis, as will be detailed further detailed below.

A similar, though not identical, empirical test was done by Volgy and Imwalle examining the correlation between the power of the United States and international conflict (Volgy and Imwalle 2000). Like Spiezio, Volgy and Imwalle operationalize power by finding the share of US economic and military output as a proportion of the military and economic output of all major nations in the international system. The study,

which examined US power from 1950 to 1992, found a statistically significant negative correlation between the relative strength of the United States and incidence of international conflict and terrorism. An interesting follow-up to Volgy and Imwalle's research would be to expand the data set to the years after 1992. Since almost all the data in the original study was from the Cold War era, adding more data from the unipolar era would be a valuable exercise. The work of Spiezio and Volgy and Imwalle has been invaluable for providing more rigorous empirical analysis of Gilpin's thesis.

However, despite the advances made by their research, there is still far more analysis that can be done to test the robustness of hegemonic stability theory. While existing research has been useful in proving correlations between hegemony and stability, demonstrating causation has proven to be more elusive. Given the complexity of the international system, this is understandable. However, the work of Spiezio, Volgy, and Imwalle presents some opportunities to look at causal mechanisms in some specific instances. For example, Spiezio identified an increase in conflict during Britain's peak power years. Further research examining Britain's role in the major international conflicts of this period could prove to be a worthwhile addition to the literature. Moreover, the work of Spiezio in particular raises an important point: if hegemony's affect is more salient for all wars, might this effect be expanded even further to all instances of military conflict? If so, what implications would this hold for Gilpin's model, which is designed to explain great power conflict?

Hegemonic stability theory has produced its fair share of scholarship in the years since Kindleberger's research of the interwar period. While most of the literature has focused on hegemony's effects on international economic relations, the work of Gilpin

has led to some serious scholarship on hegemony's effects on international security. Studies like those of Spiezio have been particularly valuable in advancing scholars' understanding of the theory's relevance to international security. The burning question remaining after reviewing the empirical literature however, is on whether the effect observed by Spiezio, Volgy, and Imwalle is really explained by Gilpin's underlying model, or if another theory be more appropriate for explaining the hegemonic effect.

Other Variants: Power Transition, World Economy, and Long Cycle Theories

Once divorced from the confines of hegemonic stability theory, it quickly becomes apparent that there are no shortage of theories in other domains of international relations that articulate some sort of relationship between hegemonic power and conflict. There are three such theories that are most directly relevant to this project: power transition theory, world systems/economy theory, and long cycle theory. In approach, power transition theory shares with Gilpin's theory of hegemonic war an underlying realist worldview, so it will be the model addressed first. World systems theory and long cycle theory are more systemic in their approach. Interdisciplinary in nature, they make a range of predictions regarding the international system, but my focus will first and foremost be trained on their predictions regarding hegemony and armed conflict.

Power transition shares with Gilpin's theory of hegemonic war an underlying concern with power as a key determinant of the nature of the international system. The origins of the theory lie in the 1950s, when A.K.F. Organski first proposed that peace is best preserved when there is an imbalance of capabilities between advantaged and disadvantaged nations (Organski and Kugler 1980). When parity of power capability

exists, war is in fact more likely. Power transition theory thus represented a clear challenge to the balance of power paradigm, which predicts the existence of stability at such junctures. To the extent that the two theories can be seen as compatible, it is in the crucial importance of power shifts in Organski's model. That is to say, it is not the condition of parity itself that produces imbalances in the system. Rather, it is the movement from a state of disequilibrium to one of equilibrium that can be destabilizing. In other words, when the dominant state clearly unmatched in capabilities, weaker states are deterred from becoming potential challengers (Ibid.). But when another state approaches the hegemon in power capabilities it is more likely to have both the means and the motive to act. The means, of course, are its heightened relative power capabilities. And if the potential challenger is dissatisfied with the current structure of the system, the motive is clear. It is in these instances, posit Organski and Kugler, that the risk of major power war is significantly heightened. There are further nuances to the model. The speed at which the potential challenger catches up to the dominant actor is of significant importance. Additionally, Organski posits that the type of power acquisition matters a great deal. A sharp rise in challenger population, for instance, is supposedly much less destabilizing than rapid political mobilization. However, for purposes of this comparison, not all of these intricacies need be examined in exhaustive detail – it is mostly at the macro-level that the salient points of comparison with the other three theories need to be drawn.

How does power transition theory stand up to empirical examination? In *The War Ledger*, Organski and Kugler run a number of tests on their theory. What the results indicate are that wars occur on the level of contenders if the balance of power is not

stable *only when* one state is in the process of overtaking the previous hegemon in power. However, the results cannot be generalized to the other ‘classes’ of powers, i.e. major powers and peripheral actors. The broader literature has, on the whole tended to back up the duo’s finding that power parity is correlated with war. One scholar surveying the literature found two analyses which failed to find such a correlation but over a dozen which do back up Organski and Kugler’s results (Danilovic 2007). While the studies all differ to some extent on the time-periods covered and the research designs utilized, they all agree that the power transition, combined with dissatisfaction by the challenger, make war more likely (Ibid.).

Long cycle and world economy theories are creatures of a slightly different breed than power transition theory and hegemonic stability theory. While the former two are systemic theories, the latter two are realist theories. In systemic theories, the unit of analysis is the world system as a whole, while in realist theories it is the nation-state. Thus, systemic analysis focuses on how the world capitalist and political systems impact global structures and dynamics, whereas realist analysis focuses more on political relations between states. Long cycle and world economy theories are thus grand-scale approaches that make predictions far beyond the realm of hegemonic governance. But as these approaches overlap most on the subject of international politics, they are more compatible for the study of major wars than in other areas (Boswell and Sweat 1991). Long cycle analysis has its origins in the work of George Modelski in the 1970s. Like realists, Modelski contends that the modern world system lacks a central authority capable of governing the system, but the absence of a world empire does not preclude the existence of some form of structure. This structure comes in three variants – the

international political system, the world economy, and the world cultural subsystem (Thompson 1989). It is through the political structure that hegemony is primarily exercised.

The world economy perspective shares many of the characteristics of long-cycle analysis. The difference is that for world-economy adherents there is one type of structure that predominantly matters: the world economy structure. If a single political system should gain dominance over the world economy, then it becomes a hegemonic state. This hegemony is inherently transitory, given the costs of military and bureaucratic strength necessary to govern the system (Thompson 1989).

Historical Approaches

Perhaps some of the most comprehensive work on hegemonic war comes at the problem from an historical angle. There is some logic to such an approach. By nature any worthwhile analysis of hegemony must deal with the issue over a large historic timeline. Kennedy's famous *Rise and Fall of the Great Powers* is perhaps the most well known contribution to this genre. In Kennedy's account, the hegemon's relative decline is attributed to the "imperial overstretch" caused as the military burden of maintaining hegemonic order weakens the very economic foundation on which the hegemon relies. As other great powers do not share the hegemon's imperial obligations their economic growth will tend to accelerate at a faster rate, and eventually a challenger will surpass the hegemon (Kennedy 1989). While Kennedy was not primarily interested in explaining great power conflict, the logic of his argument is quite similar to that found in Gilpin's theory.

Naturally, the English School has also made substantial contributions to the historical approach to hegemonic war. In *Hegemony & History* and *The Evolution of International Society: A Comparative Historical Analysis*, Adam Watson develops what might be termed the pendulum-theory of hegemony. Watson's descriptive historical case-analysis is used to outline a vision of hegemony as a position along a spectrum ranging from a system of totally independent sovereign states to a system of complete imperial control. For Watson, hegemony represents a case somewhere in the middle, a condition that is the most natural tendency for the international system. As in the other theories of hegemony, the system is unstable when it is comprised of totally independent sovereign states. Watson's interesting addition, however, is in arguing that there is another side of the spectrum – when a system of hegemony turns into a system of complete imperial domination, instability also increases. This insight adds an intriguing twist, and may run up against the predictions made by other theories during certain historical epochs. However, Watson is in agreement with the realists in the sense that neither camp sees the modern-state period as dominated by a single world empire. In this narrow sense at least, Watson's historical approach does not clash with the IR theories discussed above.

Comparing Approaches: The Main Questions

In *On Major War*, Thompson suggests that despite their very different academic origins, the systemic and realist theories actually do coalesce around a common position – and indeed it might be said that hegemonic governance is the area on which the four theories are in most agreement. All theories converge on the following argument: periods when military and economic power is concentrated in the hegemon tend to be more

peaceful, while periods of less concentrated power are associated with conflict (Thompson 1989). Unfortunately, most of the evidence for the systemic theories has been either descriptive or has covered only a short period. (e.g. Goldstein 1988, Mansfield 1988, Thompson and Zuck 1982, Spiezio 1991). Moreover, given the studies' wildly different research designs, it can be difficult to make direct comparisons. There is one major study that has performed this task – and given its significance for this research project, it deserves consideration in some detail. Mike Sweat and Terence Boswell performed a longitudinal study that tested the four hegemonic theories side-by-side. To simplify, the results broadly validated the pacifying effects of hegemony after the industrial revolution. The results were far more mixed when they attempted to find an effect before the industrial revolution using the cases of the Netherlands and the Hapsburgs. However, both of these states were dubious as hegemons to begin with – only world systems theory regards them both as global hegemons, and within the world systems camp there is disagreement over when these hegemonic years actually were.

To recap, the vast literature encompassing hegemony contains a number of competing and contradictory assertions, but most of the debate is peripheral to the central idea of interest – the hegemon's ability to govern the system and reduce conflict. There is a broad consensus on this point. Where disagreement exists it is over how hegemony is defined, how stability in the system is defined, whether the hegemon's actions have an effect outside of great power conflict, and how hegemons govern the system effectively. These are the questions that I sought to explore in my research.

III. Research Questions and Operationalization

In light of the literature review, it is necessary to clearly lay out my approach to the question of hegemonic governance. First of all, an acceptable definition of what constitutes a hegemon must be established. Secondly, a good measure of what constitutes stability in the international system must be determined, and the proposed scope of the hegemon's effect on it must be outlined. Finally, and perhaps most importantly, it is necessary to design a test that might help illuminate how it is precisely that the hegemonic peace effect is created.

Defining a Hegemonic Period

The question of what constitutes hegemony is a deceptively simple one. As the literature review demonstrated, definitions do vary. The first determination I made was to exclude potential hegemons from before the industrial revolution. There are a couple of good reasons for this. I do not argue that the industrial revolution necessarily changed the underlying motivations and principles that guide states in the international system. Hegemony of a kind doubtless was feasible before the 19th century. What distinguished the 19th century was, first of all, that global hegemony became a feasible project. While prior states, such as the Roman Empire or the Hapsburgs, exercised hegemonic authority over Europe, this reach could not extend much further simply due to technological constraints. The Roman Empire could not very well rule the world when it had no ability to project force far beyond the Mediterranean.¹ The second distinguishing factor is more methodological in nature. Regardless of whether global hegemony was possible the

¹ The question of technologies affect on hegemonic reach is one that deserves further attention by others more knowledgeable than I. I would like to point out an interesting feature of US hegemony however – the correlation with conflict is much higher than in the case of British hegemony. There are of course many possible explanations for this, but intuitively, one has to wonder whether the speed and agility of modern militaries gives hegemons added potency.

industrial revolution, it is definitely difficult to study it quantitatively. Measuring economic capabilities before the advent of coal and industrial smelting is a far more subjective business. Likewise, estimates of military strength get closer and closer to guesswork the further from the industrial revolution the scholar strays.

Narrowing the window of focus to the years after the start of the industrial revolution reduces the number of potential hegemonies considerably. However, it is still necessary to determine which states meet the criteria and during which years. A hegemon must possess enough power that it is able to exert dominance over other states and the system as a whole. In terms of candidates, there are really only two that meet a reasonable definition of hegemony at any point in time during the period – the United States and Britain. Other states, such as Germany, France, and Russia, might be said to have been hegemonic aspirants at certain junctures in time, but none ever approached the status enjoyed by the United States after World War II, or Britain during the middle of the previous century. And in terms of capabilities data (see below for a more detailed exploration) the two states are clearly in a separate class in terms of relative power. Yes, Britain was surpassed by Germany around the turn of the 20th century, but by this point the United States held a lead over both powers in terms of relative power capabilities (Correlates of War Project 2010). Focusing on international armed conflicts in two select periods will serve to increase the feasibility of the research, but the question then becomes which precise years to include in the hegemonic period.

In terms of British hegemony I will focus on the period lasting from the end of the Napoleonic wars to 1914. The choice of exact dates is, of course, somewhat subjective. A variety of different years have been proposed to mark the end of British hegemony.

Wallerstein contended that the period of British hegemony was over by the end of the 1870s. At the other end of the spectrum, Spiezio's study on hegemonic stability covered the period all the way until the onset of the Second World War. Determining where best to draw the line is a tricky business, but if a consensus point does exist, it is probably the onset of World War I. These dates also mesh well with the macro level prediction that hegemonic epochs should be book-ended by a war for control of the system. That being said, concerns over objectivity led me to test the data using the approach I did – using smaller discrete units of time. In other words, there are really two ways to approach the British and American hegemonic epochs. One way would be to treat hegemony as a binary variable. A way such an approach might work would be to establish Britain as a hegemon during years abc and not a hegemon during years xyz, then simply compare war or violence between the two periods. But since power is supposed to be the defining feature of hegemony, another approach is available.

Thanks to the Composite Index of National Capability, it is possible to, in a manner of speaking, make a statement about how *much* of a hegemon a nation is. The appeal of this approach lies in its ability to avoid the problem of the binary view of hegemony. It still matters which years are included in the dataset, but it is necessary to avoid the mindset that dictates that hegemony clearly ends at a precise moment in time.

This is even more important to consider in the case of the United States, since there has been no great power war to clearly bookend American hegemony. I determined to test the period of American hegemony beginning after the Second World War and continuing until 1999. I do not necessarily concur with the assessment that American hegemony is in fact dead, but after the 1990s the relative capabilities levels for the United

States do drop-off from the somewhat stable levels enjoyed since the 1970s. (Correlates of War Project 2010). This gave me pause enough to exclude it from the dataset, even though the United States is arguably very much a current hegemon. What gives me added caution is that while the end of British hegemony can be identified in retrospect, it is difficult to have such perspective without the benefit of historical hindsight. American hegemony may yet continue for decades to come, but it is better to err on the side of caution when dealing with years that brush perilously close to the definition of current events.

Defining Conflict and Stability

Next it is necessary to find a good measure of what constitutes stability in the international system, and the proposed scope of the hegemon's effect on it must be outlined. This question of what kind of conflict hegemony is supposed to have an effect on is a contentious one. In Gilpin's model of hegemonic war, periods of hegemony are punctuated by hegemonic wars. Thus hegemonic strength primarily affects the probability of peace between the hegemon and potential challengers. But some empirical tests of hegemonic stability theory (e.g. Spiezio 1990) have found an unexpected result: that hegemony seems to be more closely correlated with conflicts among all great power wars, or even all wars in the system. This raises the question of how far the potential effects of hegemony might extend, and what implication this would have for theory.

Certainly, the frequency and severity of interstate conflict is an important measure of stability in the international system. However, conflict in the international system takes on a wide range of forms. While military conflict is perhaps the most violent and severe dimension, it is only one of many forms that conflict can take. Conflict need not be

confined to wars between traditional states. Terrorism, piracy, and guerilla warfare are also types of conflict that are endemic to the international system. Economic conflict, exemplified by trade wars, hostile actions such as sanctions, or outright trade embargos, is also an important form of conflict in the international system, as hegemonic stability theory has shown. States can also engage in a range of less severe actions that might be deemed political conflict, by recalling an ambassador or withdrawing from international bodies, for example. Clearly, “stability” as it pertains to the international system is a vast and amorphous concept. Because of these complexities, a comprehensive assessment of the theory is beyond the purview of this research. Perhaps there is some link between hegemony and piracy, especially if one emphasizes the naval projection powers of the hegemon, as long cycle theory does. But trying to lump all these types of conflict together would be a step too far. Even if hegemony has an effect on both piracy and terrorism, for example, two completely different causal mechanisms could be behind the links. Thus I will focus on a single uniform, albeit broad measure of conflict – the militarized interstate dispute. As far as I can gather, no study has yet tried to expand the logic of hegemonic governance to this wide a level of conflict. In so doing, I hope to try to further understand what might be the underlying logic behind hegemonic governance.

Hypothesis

The proposed hypothesis is that during the periods of British and American primacy, the hegemon acted as a stabilizing force by reducing the frequency and severity of international armed conflict through the mechanism of deterrence. The dependent variable in this case is the frequency and severity of conflict. The primary independent variable is the power level of the hegemon. This hypothesis is probabilistic since it posits

that the hegemon tended to reduce conflict, not that it did so in every single possible instance. One way to test this hypothesis would be through a case-study method that examined the role of Britain and the United States in several different conflicts. This method would have the advantage of approaching the problem from a very feasible, limited perspective. While it would not reveal much about hegemony on a broader theoretical level, it would help provide practical grounding for what is a highly theoretical area of study in international relations. Another method, the method pursued below, would be to do a broader quantitative comparison of international conflict by finding and comparing data on conflict and hegemonic strength for the entire time covered by British and American hegemony. The hypothesis is falsifiable, because it could be shown that the hegemon did not act as a stabilizing force during the years of study. It also avoids some of the pitfalls associated with the case study method, such as selection bias and the inherently subjective nature of qualitative analysis.

IV. Variables and Data Sources

Excluded from this analysis are the years 1915-1919, due to some highly suspect anomalies in the data regarding composite index of national capability. The American hegemonic period encompasses the years since the end of World War II until 1999. As mentioned above, determining the exact start and end dates of hegemony is something of a subjective enterprise. These dates were chosen because they seem to be the most commonly used in the existing literature, but again, finding a perfect start and end date is inherently controversial.

Operationalization of the dependent and independent variables is a challenge of critical importance to the project. To determine the strength of the hegemon, I use the

Composite Index of National Capability published by the Correlates of War Project. The Composite Index of National Capability is a statistical measure of national power that averages six different dimensions of relative strength to produce a single number between 0 and 1. Each dimension is weighted equally. A state with all the power in the international system would receive a CINC score of 1, whereas a state with absolutely no power in any dimension would receive a 0. For many years, international relations scholars were forced to rely on simpler measures like GDP to gauge national strength. The Composite Index of National Capability is an improvement over these one-dimensional measures because it measures three different categories of power: economic, demographic, and military. While GDP may be acceptable as a measure of potential power, it does not reveal much about many important aspects of hegemony, such as a state's capacity to undertake military action.

Economic power is measured through the iron and steel production ratio and the primary energy consumption ratio. The iron and steel production ratio measures the nation's iron and steel production in kilotons in a given year against the total amount produced in the world in that year. Since iron and steel are the primary products of blast furnaces, they are one of the best proxies for overall industrial strength that exists in a quantifiable form. The primary energy consumption ratio measures a nation's energy consumption in a given year compared to total energy consumption in the world in that year. Energy consumption can take many forms, from electricity to gasoline to coal burning. The Correlates of War project converts all types of energy production into kilotons of coal equivalent. For example, if a nation consumed 1,000 cubic meters of natural gas, the energy represented by this gas would be represented in kilotons of coal.

This makes it compile a single ratio that takes into account all energy types. Relative energy consumption is a useful gauge of economic capacity since it measures a quantitative commodity that can be compared from state-to-state and year-to-year.

Demographic strength in the Composite Index of National Capability is measured using the total population ratio and the urban population ratio. The total population ratio measures the population of the state in question against the population of the world in a given year. There are several advantages a state with a larger population has in the international system. From a military standpoint, such a state can suffer greater losses during a time of war and can experience less acute labor shortages on the home front during such times. But simply measuring the number of people in a state fails to capture some of the more subtle benefits accrued by population. The Correlates of War project thus looks at urban populations for a more complete view, since they are “associated with higher education standards and life expectancies, with industrialization and industrial capacity, and with the concentrated availability of citizens who may be mobilized during times of conflict.” To count as an urban population, a city must have a population of at least 100,000 people. Of course, it is impossible to come up with completely objective definition of urban. Especially in the first part of the 19th century, many smaller cities could be unfairly discounted by this definition. However, the purpose of the urban population index is not to compare cities from different decades or centuries – its role is as a relative measure within a given year.

Any analysis of hegemonic power would not be complete without a measure of military strength. Military strength in the Composite Index of National Capability is measured through the military expenditures ratio and the military personnel ratio. For

purposes of the index, military personnel are defined as soldiers under the control of the federal government, meant for use against foreign enemies. Military police and reserves, for instance, are not counted in the total. Military expenditures are defined as the military budget for a given state in a given year. Rather than look at official military budgets, which can be unreliable, the Correlates of War Project focuses on what constitutes true military spending. For example, pension to veterans and war widows are excluded from the calculations, even if they were included in the state's official military budget.

My dependent variable, level of conflict, is also measured using data from the Correlates of War Project. Previous quantitative analyses of hegemony, such as that done by Spiezio in the 1980's, examined only incidence of major power war. Unfortunately, this means that there are long "dry spells" in the data in which there are zero major power wars. At other points, the data contains only one or two major power conflicts during any given period. For statistical purposes, these data are less than ideal. By looking at frequency of military conflict, I avoided this statistical conundrum. The Correlates of War Project defines conflict as threat, display, or use of military force short of war. As an example of what constitutes such an incident, here is the Project's summary of one dispute in 1997:

USA patrol boats stopped and detained two Russian tankers suspected of carrying sanctioned Iraq oil from the Persian Gulf. Russian Foreign Minister demanded the immediate release of the tanker ("Dispute Narratives" 2004).

Their database catalogues over 2,000 interstate militarized disputes in the years since 1815. Thus, it is a far less crude way of quantifying conflict in the international system. It also increases the reliability of quantitative analysis of hegemonic governance.

To operationalize my second independent variable, use of military force by the hegemon, I simply extracted every incident where the hegemon used military force from the Correlates of War conflict data set. In other words, I took each instance of conflict in which the hegemon was a party and plotted it against the total amount of conflict in a given five-year period.

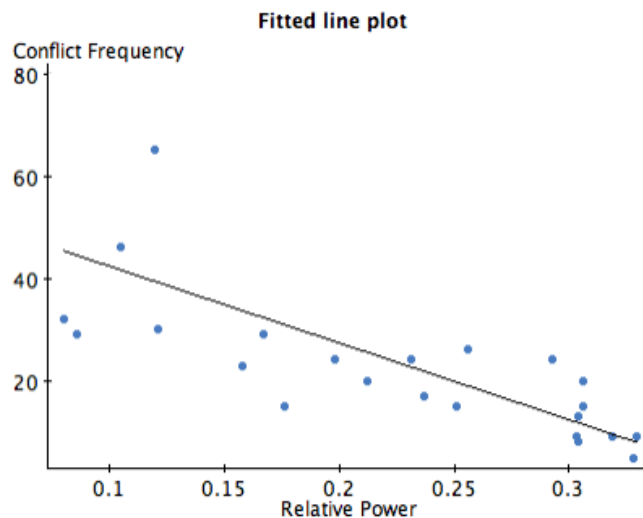
To analyze these data, regression analysis is an appropriate tool. Using ordinary least-squared regression, I determined whether a linear relationship existed between the strength of the hegemon and the level of conflict in the international system. I also used regression analysis to determine the relationship between quantity of military force used by the hegemon and the level of conflict in the international system.

There are some shortcomings to the approach presented above. None of the measures of national power that make up the Composite Index of National Capability are completely flawless. Particularly in the early years, data may not be as precise as would be ideal. Additionally, the index does not account for some of the more subtle psychological and political aspects of power. However, this is a problem inherent in doing quantitative analysis. It is impossible to measure intangible factors using hard numbers. The Composite Index of National Capability is a good way to measure a concept that is very difficult to quantify. The analysis should be valued more for the questions it raises than for the tentative answers it provides. Regardless, in order to defuse concerns about the Composite Index of National Capability's weighting of variables, I also ran separate regressions based solely on military and economic relative power.

V. Results

The statistical tests performed resulted in some potentially interesting findings. The first set of data analyzed was the data on British hegemonic strength in comparison to armed conflict. As can be seen in the table below, British hegemonic strength is relatively high at the outset of the period covered, and then begins a gradual decline in the later part of the century. Correspondingly, international conflict is also higher in the final decades of focus than at any other time during the period of British hegemony. A graph of the relationship between the two variables puts this data into a visual context:

Years Covered	Conflicts	CINC
1815-1819	5	0.307765
1820-1824	9	0.308672
1825-1829	9	0.308776
1830-1834	9	0.302717
1835-1839	13	0.303765
1840-1844	8	0.304156
1845-1849	15	0.305510
1850-1854	20	0.306360
1855-1859	24	0.292667
1860-1864	26	0.255963
1865-1869	15	0.251457
1870-1874	17	0.237007
1875-1879	24	0.231121
1880-1884	20	0.211896
1885-1889	24	0.197775
1890-1894	15	0.175833
1895-1899	29	0.167495
1900-1904	23	0.158162
1905-1909	30	0.120888
1910-1914	65	0.120462



Clearly, there is a strong negative correlation between British hegemonic strength and violent conflict. Subjectively, the data in the table and the graph look as if they support the hypothesis, and more rigorous statistical analysis confirms this. Regression analysis reveals that the Pearson's r -value for this data is -0.732 , a very strong negative correlation. Additionally, the data is highly significant, with a p -value of $.0002$.

The next step was to determine if this relationship held true for the other period of hegemony captured by reliable data- that of United States hegemony. As can be seen in the table below, there are fewer data points to work with simply because there are fewer years of hegemony to work with. However, visually, the graph of this relationship looks quite similar to the one found for British hegemony:

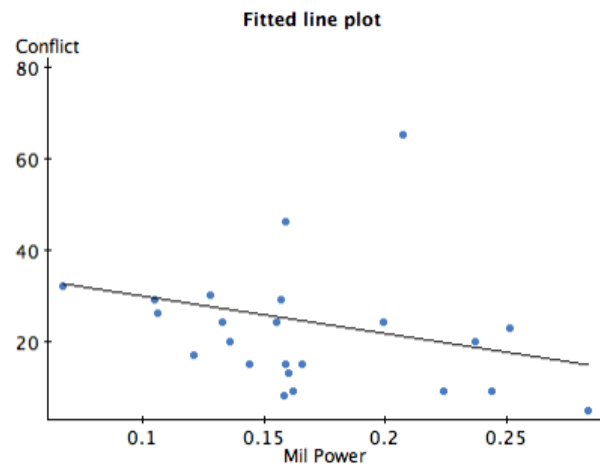
Years Covered	CINC	Conflicts
1945-1949	0.3251239	53
1950-1954	0.3014824	88
1955-1959	0.2491925	135
1960-1964	0.2095642	153
1965-1969	0.2041942	145
1970-1974	0.1659338	132
1975-1979	0.1412986	144
1980-1984	0.1350661	163
1985-1989	0.1396454	202
1990-1994	0.1468614	126
1995-1999	0.1464107	163

QuickTime™ and a
 QuickTime decompressor
 are needed to see this picture.

Statistical analysis confirms that the relationship found for British hegemony also holds for American hegemony. In fact, Pearson's r is $-.819$ for this data set – indicating an even stronger correlation than that found between British hegemonic strength and violent conflict. Probably due to the smaller data set, the p -value is $.002$, still well beyond the threshold of statistical significance, but higher than the values found for British hegemony. In both of these cases, a clear negative correlation can be established between hegemonic power and violent conflict. As mentioned above, I also broke down the data into economic and military subcomponents in order to address the concerns of those who hold exclusively economic or military indicators to be important. What I found was that the same pattern emerges – whether dealing solely with economic or military variables, the same pattern that emerged for the overall data holds up. In my review of the literature

I found no scholar who advocated for a power measure based solely on demographics, so I have omitted looking exclusively at that relationship.

Year	Mil Spending	Conflict
1815-1819	0.283492672	5
1820-1824	0.223980542	9
1825-1829	0.244338151	9
1830-1834	0.161932957	9
1835-1839	0.159536552	13
1840-1844	0.157939797	8
1845-1849	0.165964312	15
1850-1854	0.236642445	20
1855-1859	0.199187872	24
1860-1864	0.105697529	26
1865-1869	0.158806708	15
1870-1874	0.120699628	17
1875-1879	0.132513581	24
1880-1884	0.136076375	20
1885-1889	0.154986914	24
1890-1894	0.143970819	15
1895-1899	0.156745702	29
1900-1904	0.25129528	23
1905-1909	0.127524639	30
1910-1914	0.207172546	65



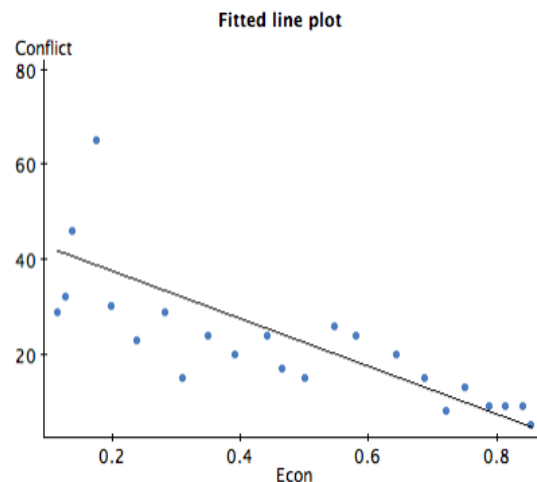
Above is the data based solely on military power for British hegemony. Visually the a similar pattern emerges as with the overall data. Statistical analysis confirms this impression: the correlation coefficient is $-.245$, far from negligible, but far less dramatic than the overall measure of power, and still significant at the .05 level. The weaker correlation does not necessarily mean that military strength has no value in predicting conflict, it just indicates that it is far from the complete picture. A similar story plays out when the data on American hegemony is analyzed:

Year	Military Spending	Conflict
1945-1949	0.396074487	53
1950-1954	0.471776875	88
1955-1959	0.425786838	135
1960-1964	0.365564346	153
1965-1969	0.378224458	145
1970-1974	0.285955618	132
1975-1979	0.222681832	144
1980-1984	0.259814345	163
1985-1989	0.320110141	202
1990-1994	0.360196036	126
1995-1999	0.341913666	163

QuickTime™ and a
decompressor
are needed to see this picture.

Again, statistical analysis of this data reveals that Pearson's r-value is lower than in the data that looks at total national capability, measuring in at -.511, in comparison to the r-value of -.819 found when comparing total American capability to violent conflict levels. The result, with a p-value of .108, is not significant at the .05 level. Turning to economic strength, it once again becomes apparent that the overall results are upheld. In the case of Britain, the raw data looks similar to that for military strength:

Year	Econ Strength	Conflict
1815-1819	0.853538089	5
1820-1824	0.840639128	9
1825-1829	0.812610895	9
1830-1834	0.788362747	9
1835-1839	0.749862405	13
1840-1844	0.720635622	8
1845-1849	0.687336635	15
1850-1854	0.644237745	20
1855-1859	0.579908461	24
1860-1864	0.545911899	26
1865-1869	0.500740641	15
1870-1874	0.465214556	17
1875-1879	0.442218083	24



1880-1884	0.390582117	20
1885-1889	0.34851341	24
1890-1894	0.309727031	15
1895-1899	0.282145134	29
1900-1904	0.238163843	23
1905-1909	0.199316659	30
1910-1914	0.176313819	65

Statistical analysis shows that the relationship is actually stronger than the relationship found between conflict and military spending. Pearson's r-value is $-.7398$, compared to the $-.245$ r-value found in the analysis of British military spending. When this analysis is applied to American economic power, a similar pattern emerges:

1945-1949	0.563718464	53
1950-1954	0.489165442	88
1955-1959	0.373312828	135
1960-1964	0.30090454	153
1965-1969	0.282157745	145
1970-1974	0.196508257	132
1975-1979	0.21354551	144
1980-1984	0.182688805	163
1985-1989	0.167266347	202
1990-1994	0.172330375	126
1995-1999	0.18656161	163

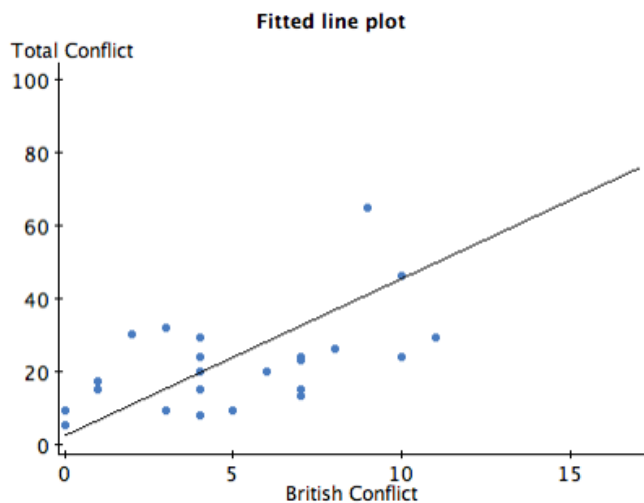
QuickTime™ and a
decompressor
are needed to see this picture.

Regression analysis of this data shows that Pearson's r-value is $-.836$. In the case of American hegemony, economic strength is a better predictor of violent conflict than even overall national power, which had an r-value of $-.819$. The data is also well within the realm of statistical significance, with a p-value of $.0014$. While the data for British hegemony was not as striking, the same overall pattern holds true in both cases. During both periods of hegemony, hegemonic strength was negatively related with violent conflict. The same patterns can be seen when the data is broken down into military and economic subcomponents, but economic strength seems to be a better predictor of conflict levels. Before drawing hasty conclusions from that fact, however, it is important to realize that it does not mean hegemonic governance is not exercised through military

means. The huge distorting factor to consider here is that the hegemon might increase military spending in a more uncertain and conflict-prone international climate. Thus, the hegemonic peace effect might still be driven by military power even though economic power might be more closely associated with conflict levels at any given time. In reality, both dimensions of power are likely at work, which is why looking at power holistically is a strong approach.

The next logical step in terms of data analysis was to probe for the possible deterrent effect of hegemony. To do this I first looked at the relationship between the hegemon's use of force and total force used in the international system. As can be clearly seen in the table and graph below, there is actually quite a strong positive relationship between use of force by Britain and total force used in the international system:

Year	Brit. Conf.	Tot. Conf.
1815-1819	0	5
1820-1824	0	9
1825-1829	3	9
1830-1834	5	9
1835-1839	7	13
1840-1844	4	8
1845-1849	7	15
1850-1854	4	20
1855-1859	7	24
1860-1864	8	26
1865-1869	1	15
1870-1874	1	17
1875-1879	4	24
1880-1884	6	20
1885-1889	10	24
1890-1894	4	15
1895-1899	11	29
1900-1904	7	23
1905-1909	2	30
1910-1914	9	65



Statistical analysis provides quantitative backing for this observation. The correlation coefficient is .772, a strong positive relationship. The data is also highly

statistically significant, with a p-value of less than .0001. The data presented in the table and graph below tells a similar story to that shown above, albeit with significantly fewer data points to work with:

Year	US Con.	Tot. Con.
1945-		53
1949	9	
1950-		
1954	5	88
1955-		
1959	26	135
1960-		
1964	25	153
1965-		
1969	27	145
1970-		
1974	17	132
1975-		
1979	20	144
1980-		
1984	29	163
1985-		
1989	18	202
1990-		
1994	17	126
1995-		
1999	16	163

QuickTime™ and a
decompressor
are needed to see this picture.

However, despite the smaller amount of data points, the relationship is still strong statistically, evincing a Pearson's r-value of .617 – weaker than that found for British hegemony, yet noteworthy nonetheless. The p-value, at .043, is significant at the 5% but not the 1% level. Thus, although the data is not quite as strong, the results do confirm the results found for British hegemony. As with the military/economic breakdown, it is important not to read into these results incorrectly. In more violent times, the hegemon could be more prone to use violence. Additionally, if the hegemon is weaker, then we

would expect there to be both more conflict as a whole and more powers willing to engage in conflict incidents with the hegemon. Upon peering closer into the data a more nuanced picture emerges. In order to try and gauge a deterrent effect, I separated the conflict data into distinct periods. In order to establish the credibility of a deterrent, the hegemon would presumably need to show its capacity to use force during its phase of rising hegemony. Thus by breaking the conflict data into phases of rising and falling hegemony, the picture becomes clearer. Rising hegemony is defined as the period when the hegemon's relative power is in the ascendancy or has reached a peak, whereas falling hegemony is defined as the period when relative power starts to decline. As a proportion of total conflict, British involvement in conflicts was 50% higher during phase of rising hegemony² than during the phase of falling hegemony. Similarly, American conflict involvement was 36% higher during the phase of rising hegemony³ than during the phase of falling hegemony. The similarity between the two rising periods could point to the need for the hegemon to establish credibility in order to be an effective deterrent. In order to further test this notion, I looked at two periods when hegemons were not credible deterrents – the phase of rising hegemony when Britain was still establishing its hegemonic credibility, and the years between WWI and WWII, when the United States clearly possessed hegemonic capabilities but refused to utilize them, thus failing the credibility test. What was found in both cases is that the results are far less robust. For

² Roughly until 1855

³ Determining the years of rising American hegemony is a bit more difficult, since American hegemonic power was at its peak when the period officially begins in 1945. But American power capabilities had actually reached the level at which they remained for most of the 20th century by 1910, thus I define the phase of rise strictly using numbers, as the prior two decades during which American relative power went from roughly half of British levels to twice British levels.

Britain's phase of rising hegemony, statistical analysis reveals an r-value of -.52, lower than what was found for the overall period, and a p-value of .185, much higher than the acceptable threshold for statistical significance. For America's years of hegemonic negligence,⁴ we find even poorer results - an r-value of -.321 and a p-value of .168.

VI. Further Analysis and Conclusions

Alas, it is now time to leave the world of hard data and return to the realm of theoretical speculation. Unfortunately, much beyond the simple facts – that hegemony is strongly associated with relative lack of conflict, that this relationship holds up using different measures of hegemonic strength – remains only speculation. The data regarding British and American involvement in conflict, and the differences between rising and falling hegemony, certainly raise interesting possibilities, but for now that is all they remain – possibilities.

What produces hegemonic deterrence? There are at least two possible answers to this question. If one looks solely at hard power data as a valid indicator of hegemony, than preponderance of power may be the best theory to employ. Gilpin theorized that when a state has the preponderance of power in the international system, rivals are more likely to resolve their disagreements without resorting to armed conflict (Gilpin 1983). The logic behind this claim is clear – it makes more sense to challenge a weaker hegemon than a stronger one. This simple yet powerful theory can help explain the strong positive correlation between military conflicts engaged in by the hegemon and conflict overall. It would also help explain why hegemons seemingly must work to establish credibility

⁴ Anecdotally, American isolationism during this period is taken for granted. When I checked conflict involvement, this anecdotal impression of a unique isolationism moment was confirmed. American involvement in interstate conflict was lower not only than in the years after WWII, but also lower than during the two decades before WWI.

before the deterrent comes into effect – states will challenge a hegemon if it has not yet proved itself to be strong.

But beyond pure realism, these findings should also raise questions about the role of both leadership and perceptions in fostering hegemonic governance. During the interwar years, the United States very clearly had the capacity to act as a hegemon – as mentioned above its relative power levels matched those it possessed for much of the postwar hegemonic period. Hegemony, it seems, is not a phenomenon determined purely by power levels. To some degree, it could also be viewed as a choice made by the most powerful state. In terms of perception, while a weak state obviously cannot convince others it is a strong state, or at least not for very long, it may be the case that the hegemon exercises a deterrent effect only once it has established itself as a powerful state. Thus while Britain was very strong in the early years of its hegemony, the effect on the international system might not have been as salient due to the perceptions gap.

In many ways, this capstone has raised at least as many questions as it has answered. One thing that is clear, however, is that the scholarship on hegemony is far from settled. For those willing to explore, there are still many mysteries to be solved about the workings of one of the most intriguing aspects of the international system.

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