

# Correspondence

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## The Role of Hierarchy in International Politics

To the Editors:

In "Escape from the State of Nature: Authority and Hierarchy in World Politics," David Lake makes a strong case that hierarchy matters.<sup>1</sup> Building on his previous work on the subject,<sup>2</sup> he argues that security and economic hierarchy fundamentally constrain the security behavior of subordinate states in international politics. His approach to the topic, however, raises a variety of questions about how best to define, measure, and test the effect of hierarchy in international politics.

### DEFINING HIERARCHY

International relations theorists have placed tremendous analytical importance on the role of anarchy in international relations theory, but they have paid much less attention to conceptualizing its antithesis.<sup>3</sup> Lake characterizes hierarchy as a situation "when one unit, the dominant state, possesses authority over a second, subordinate state" (p. 50). Political authority, in turn, is conceived of as a "contract" in which a dominant actor provides "social order" in exchange for a subordinate's "consent" (pp. 54–55).

Lake's conception of hierarchy as a social bargain is straightforward, but it is overly narrow. His definition precludes relations of hierarchy that are established by coercion. Many of the examples of hierarchy that Lake identifies, however, such as empires, protectorates, or economic dependencies (pp. 58–61), are the product of brute force, not of mutual interest. Moreover, his definition excludes relations of hierarchy that are established by ideational legitimacy.<sup>4</sup> Indeed, many social theorists define political authority not as an instrumental calculation but in terms of the logic of appropriateness. A dominant actor possesses political authority by virtue of her status, position, and charisma—not her capacity to bribe.<sup>5</sup> Similarly, when a subordinate actor

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1. David A. Lake, "Escape from the State of Nature: Authority and Hierarchy in World Politics," *International Security*, Vol. 32, No. 1 (Summer 2007), pp. 47–79. Subsequent references appear parenthetically in the text.

2. See David A. Lake, *Entangling Relations: American Foreign Policy in Its Century* (Princeton, N.J.: Princeton University Press, 1999).

3. For alternative conceptions, see David C. Kang, "Hierarchy, Balancing, and Empirical Puzzles in Asian International Relations," *International Security*, Vol. 28, No. 3 (Winter 2003/04), pp. 165–180; and Ian Clark, *The Hierarchy of States: Reform and Resistance in the International Order* (New York: Cambridge University Press, 1989).

4. See Nicholas Onuf and Frank F. Klink, "Anarchy, Authority, Rule," *International Studies Quarterly*, Vol. 33, No. 2 (June 1989), pp. 149–173; and Ian Hurd, "Legitimacy and Authority in International Politics," *International Organization*, Vol. 53, No. 2 (Spring 1999), pp. 379–408.

5. Max Weber, *The Theory of Social and Economic Organization*, trans. A.M. Henderson and Talcott

follows a command, he obeys because he must, not because he is appropriately compensated.<sup>6</sup> Not surprisingly, powerful states frequently strive to establish ideational legitimacy over subordinates so that they do not have to rely on material inducements. John Ikenberry and Charles Kupchan, for example, highlight how powerful states use socialization to convince other states of the righteousness of their behavior.<sup>7</sup> Similarly, Patrick Jackson demonstrates how the United States took advantage of shared notions of “civilization” and “the West” following World War II to persuade European states to accept its postwar leadership.<sup>8</sup> By defining hierarchy as a social contract, Lake excludes the examination of these more subtle forms of authority in which shared understandings allow the powerful to exert legitimate control.

#### MEASURING HIERARCHY

Whereas many scholars rely on detailed case studies, rather than systematic measures, to identify relations of hierarchic subordination, Lake’s article is groundbreaking in its attempt to operationalize political authority by developing a general index of U.S. security and economic hierarchy. Lake is correct that a complete measure of hierarchy must effectively distinguish between differences in “coercive capacities” and “variations in authority” (p. 62). His two composite indexes of security and economic hierarchy, however, do not meet this standard.

Consider Lake’s measure of security hierarchy, which is derived from two sources—the “deployment of military forces from the dominant country” and the “number of independent alliances” that a subordinate does not share with the dominant country (pp. 62–63). Lake claims that these proxy measures represent “legitimate” political authority (p. 62), but this is not necessarily the case. Not all overseas troop deployments are the result of consensual bargains. The United States’ sizable troop deployments in Panama and the Philippines, for example, were a legacy of colonial imposition, whereas those in Germany and Japan were the result of military conquest and occupation.<sup>9</sup> Similarly, a subordinate state may lack independent alliances not because it respects a dominant state’s authority, but because it has been coerced. Following the Spanish-American War, for example, Cuba was forced to sign a treaty with the United States prohibiting it from entering into alliances with foreign powers.<sup>10</sup> During the colonial period, European great powers imposed protectorate treaties with similar stipulations.<sup>11</sup> In this way, Lake’s index of security hierarchy often reflects the exercise of coercive power, not political authority.

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Parsons (New York: Free Press, 1947), pp. 329–359; and C.W. Cassinelli, “Political Authority: Its Exercise and Possession,” *Western Political Quarterly*, Vol. 14, No. 3 (September 1961), pp. 642–644.

6. Young C. Kim, “Authority: Some Conceptual and Empirical Notes,” *Western Political Quarterly*, Vol. 19, No. 2 (June 1966), pp. 225–227.

7. G. John Ikenberry and Charles A. Kupchan, “Socialization and Hegemonic Power,” *International Organization*, Vol. 44, No. 3 (Summer 1990), pp. 283–315.

8. Patrick Thaddeus Jackson, *Civilizing the Enemy: German Reconstruction and the Invention of the West* (Ann Arbor: University of Michigan Press, 2006).

9. See Christopher T. Sandars, *America’s Overseas Garrisons: The Leasehold Empire* (Oxford: Oxford University Press, 2000), pp. 108–138, 239–240; and Robert E. Harkavy, *Bases Abroad: The Global Foreign Military Presence* (Oxford: Oxford University Press, 1990), pp. 75–76.

10. See Louis A. Pérez Jr., *Cuba under the Platt Amendment, 1902–1934* (Pittsburgh, Pa.: University of Pittsburgh Press, 1986), pp. 44–55.

11. Gordon Martel, “Afterword: The Imperial Contract—An Ethology of Power,” in A. Hamish

Moreover, it is not evident that Lake's index is genuinely additive such that the "larger the deployment" and the fewer the number of "independent alliances," the greater the political authority possessed by a dominant state (p. 62). Indeed, the opposite could be true. All things being equal, a dominant state that possesses genuine political authority should need to rely less on sizable deployments of troops overseas when trying to convince a subordinate state to accede to its demands. Similarly, even a state with multiple independent alliances may still be subordinate. The dominant state may support the independent alliance, as was the case with the Baghdad Pact, or the independent alliance may not provide the subordinate with any practical autonomy.

There are similar problems with Lake's composite measure of economic hierarchy, which is derived from a measure of the independence of a subordinate state's exchange rate regime and the extent of its trade dependence. Neither of these measures is a clear indicator of the actual (let alone legitimate) exercise of political authority by a dominant state. In the case of exchange rate regimes, for example, the United States Congress refused to pass legislation providing financial incentives to Latin American states to dollarize, while the European Central Bank has discouraged "euroization" by countries hoping to join the European Monetary Union.<sup>12</sup> It is unlikely, therefore, that exchange rate harmonization signifies a high degree of political authority if dominant countries either are ambivalent or actively discourage it.

Similarly, trade dependence does not necessarily provide the United States with political authority. As Lake admits, trade patterns are established "without explicit government decisions being made" (p. 67). How then can they measure the existence of authority relationships between governments? Moreover, trade dependence is a function not only of the magnitude of trade but also of the absence of substitutable partners.<sup>13</sup> Without a way to measure a country's access to potential alternative outlets for trade, Lake's index could just as easily be measuring economic integration as economic hierarchy.

An additional way to assess the plausibility of Lake's indexes is to see whether they conform to commonsense understandings. Lake's two indexes, however, produce counterintuitive rankings. On the security hierarchy index for 1965, for example, U.S. client states such as the Philippines and Japan, both thought to possess little constitutional or practical autonomy, receive nearly identical scores as fully autonomous allies such as Canada, Denmark, and New Zealand. Similarly, on the economic hierarchy index for 1965, neocolonial dependencies such as the Philippines and Costa Rica are ranked nearly equivalent to economic partners such as Norway and Switzerland.

Part of the difficulty of creating universal measures of a phenomenon such as hierarchy is that the specific context of a relation is often vital. For example, Spain may not

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Ion and E.J. Errington, eds., *Great Powers and Little Wars: The Limits of Power* (Westport, Conn.: Praeger, 1993), p. 204.

12. See B.J. Cohen, "U.S. Policy on Dollarization: A Political Analysis," *Geopolitics*, Vol. 7, No. 1 (Summer 2002), pp. 63–84; and Eric Helleiner, "Dollarization Diplomacy: U.S. Policy towards Latin America Coming Full Circle?" *Review of International Political Economy*, Vol. 10, No. 3 (August 2003), pp. 422–425.

13. Kenneth N. Waltz, "The Myth of National Interdependence," in Charles Kindleberger, ed., *The International Corporation: A Symposium* (Cambridge, Mass.: MIT Press, 1970), pp. 205–233; and David A. Baldwin, "Interdependence and Power: A Conceptual Analysis," *International Organization*, Vol. 34, No. 4 (Autumn 1980), pp. 471–506.

have hosted as many troops as the NATO countries during the 1960s, yet it was generally considered to have much less political autonomy because the Status of Forces Agreements provided it with little legal jurisdiction or oversight over foreign troops.<sup>14</sup> Similarly, Japan's dependence on the United States was not simply a function of the presence of U.S. troops on Japanese soil but the way in which article 9 of the Japanese constitution limited Japan's security alternatives.<sup>15</sup> Panama was likewise considered an economic dependency of the United States not because of the balance of trade, but because of the extraterritorial concessions granted to the Panama Canal Company under the terms of the Hay-Bunau-Varilla treaty.<sup>16</sup> Given the wide variation in origins of security or economic dependence, it may be impossible to operationalize a universal index of hierarchy.

#### TESTING HIERARCHY

Lake aims to demonstrate that hierarchy matters, arguing that countries that score high on his measures of security and economic hierarchy should exert less "defense effort," which he measures as the money spent on defense as a percentage of gross domestic product (GDP). Yet his statistical findings provide only mixed, selective support for this hypothesis (see p. 74, Table 2). Of his two composite indexes, only the coefficient for the index of security hierarchy is statistically significant and going in the right direction. The index for economic hierarchy is not significant, nor is the sign of its coefficient in the predicted direction. In addition, when one disaggregates Lake's composite index for security hierarchy into its two component parts, only the measure of independent alliances is statistically significant. Given that only one of his four measures is statistically significant, Lake's claim that "these results generally support the hypothesis that hierarchy leads to lower levels of defense effort" is questionable (p. 76).

Furthermore, a closer examination of the statistical findings reveals that influential outliers and regional effects are driving both the significance and the magnitude of Lake's original results. Consider the issue of influential outliers. While most countries in the sample spend between 2 to 5 percent of their GDP on defense, there are a small number of cases—including Kuwait in 1991, Libya in 1978, and North Korea in 1958—in which a country spent upward of 50 percent.<sup>17</sup> Given that these observations all rank relatively low on Lake's measure of security hierarchy, the relationship between hierarchy and defense effort may be a statistical artifact.

To determine whether this was the case, I reestimated Lake's four models excluding the ten most influential outliers.<sup>18</sup> For model 1, these outliers represented just 0.2 per-

14. Richard F. Grimmett, "An Overview of the Formative Years: 1953–1970," in John W. McDonald Jr. and Diane B. Bendahmane, eds., *U.S. Bases Overseas: Negotiations with Spain, Greece, and the Philippines* (Boulder, Colo.: Westview, 1990), pp. 9–12.

15. Walter LaFeber, *The Clash: U.S.-Japanese Relations throughout History* (New York: W.W. Norton, 1997), pp. 257–314.

16. Michael L. Coniff, *Panama and the United States: The Forced Alliance* (Athens: University of Georgia Press, 2001), pp. 63–83.

17. A scatterplot diagram depicting these outliers can be found at [http://idisk.mac.com/pkmacdonald-Public/hierarchy\\_figure1.pdf](http://idisk.mac.com/pkmacdonald-Public/hierarchy_figure1.pdf).

18. I measure influential outliers by the absolute value of the residual, which is the difference between the predicted and observed value for each country-year observation.

cent of the total sample of 4,522 country-year observations. Removing just ten outlying cases, however, substantially altered Lake's findings. Indeed, the statistical relationship that Lake finds between hierarchy and defense effort either decreased or disappeared in every one of his models.<sup>19</sup>

For model 1, for example, excluding the influential outliers led the coefficient for the index of security hierarchy to decrease from -0.0109 to -0.0016. Substantively, whereas Lake originally estimated that a one-unit increase in security hierarchy would decrease a country's defense effort by 1.11 percent of GDP, the more reasonable estimate is 0.16 percent of GDP, about seven times less. It should also be noted that a one-unit increase in security hierarchy does not represent a realistic empirical shift. Given the way Lake standardized his index, a one-unit change in hierarchy is equivalent to moving from no hierarchy to the level of Panama in 1995, the highest value for the entire data set for that year. If one uses a more reasonable increase from no security hierarchy to its mean value—equivalent to South Korea in 1971—the substantive change in defense spending was just 0.03 percent of GDP. In other words, for the average country, security hierarchy has only a miniscule effect on defense effort.

More important, with outliers excluded, the effects of security and economic hierarchy disappeared for model 2, in which a fixed-effects estimator is used. This nonresult is suggestive, because a fixed-effect estimator is generally thought to be a more stringent test of one's hypothesis. By including a dummy variable for each country, a fixed-effects estimator seeks to control for unmodeled demographic or regional differences between countries that might be driving the results.<sup>20</sup> There are good reasons to believe that regional factors may be driving Lake's results. To begin with, there is significant regional variation on many of the independent variables. The mean score for the independent alliance measure, for example, is almost four times higher for South America (0.953) than for the rest of the sample (0.253).<sup>21</sup> Similarly, the mean score for the overseas troop measure is almost a hundred times less for Africa (0.001) than for the rest of the sample (0.139). There is also regional variation in the dependent variable. The average defense effort, for example, is three times higher for the Middle East (6.2 percent) than for the rest of the sample (2.0 percent).

To explore whether unmodeled regional factors might be influencing the results, I reestimated Lake's models, adding dummy variables for a country's region.<sup>22</sup> When region is controlled for, Lake's results disappeared.<sup>23</sup> The composite indexes of security and economic hierarchy failed to achieve statistical significance, as did their individual

19. Tables of coefficients for all of the reestimated models can be found at [http://idisk.mac.com/pkmacdonald-Public/hierarchy\\_table1.pdf](http://idisk.mac.com/pkmacdonald-Public/hierarchy_table1.pdf).

20. See Donald P. Green, Soo Yeon Kim, and David H. Yoon, "Dirty Pool," *International Organization*, Vol. 55, No. 2 (April 2001), pp. 441–468; and James A. Stimpson, "Regression in Space and Time: A Statistical Essay," *American Journal of Political Science*, Vol. 29, No. 4 (November 1985), pp. 914–917.

21. This difference is an artifact of the Correlates of War coding scheme in which the Rio Pact is (somewhat puzzlingly) scored as an alliance that has endured from 1947 to the present.

22. I coded seven regions—Africa, Asia, Europe, the Middle East, North America, the Pacific, and South America.

23. The results likewise disappeared if just three of the regional dummy variables—Africa, the Middle East, and South America—were included.

components. Substantively, defense effort appears to be a highly regionalized phenomenon.<sup>24</sup> Certain regions where security is abundant, such as South America, spend much less on defense than regions in which security is scarce, such as the Middle East. Of course, it is possible that the United States' global security posture has fostered regionalized security zones.<sup>25</sup> Yet Lake offers no theoretical reason why security hierarchy should be able to explain regional differences in defense effort, while being unable to explain variation between countries within particular regions. Furthermore, regional variations in defense effort may be driven by other factors, such as South America's unique civil-military relations or the Middle East's turbulent history.<sup>26</sup>

#### HIERARCHY LOSE UPON THE EARTH?

Given difficulties in measurement and the mixed results of Lake's initial statistical tests, one might be tempted to dismiss hierarchy as an object worthy of empirical study. Such a conclusion would be wrong. Lake has done the field a service by seeking to reveal patterns of hierarchy in international politics through rigorous statistical analysis. But given the challenges in mapping the subtle and complex ways in which political authority operates in international politics, a different methodological approach might be called for. Rather than confine one's study to consensual forms of hierarchy, the full range of ways in which dominant states maintain hierarchical relations should be considered, whether coercion, choice, or legitimacy. Similarly, rather than reduce hierarchy to a series of proxies, in-depth case studies should be used to trace the strategies powerful states employ to extract obedience from the less powerful. Finally, rather than seek to unearth the global influence of hierarchy, scholars should begin by examining bilateral or regional relations of sovereign inequality.

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#### *The Author Replies:*

Paul MacDonald raises some important issues in his letter. I am delighted that he has engaged the arguments and evidence in my recent article so deeply.<sup>1</sup> I welcome this opportunity to clarify and extend several key points.

Although the field of international relations almost uniformly assumes that all relationships between states are anarchic, or devoid of authority, the largest ambition of my research program is to identify, open for scrutiny, and ultimately understand the role of

24. See also Benjamin E. Goldsmith, "Bearing the Defense Burden, 1886–1989: Why Spend More?" *Journal of Conflict Resolution*, Vol. 47, No. 5 (October 2003), pp. 558–559.

25. See Peter J. Katzenstein, *A World of Regions: Asia and Europe in the American Imperium* (Ithaca, N.Y.: Cornell University Press, 2005).

26. See Félix E. Martín, *Militarist Peace in South America: Conditions for War and Peace* (New York: Palgrave, 2006), pp. 7–24, 79–100.

1. David A. Lake, "Escape from the State of Nature: Authority and Hierarchy in World Politics," *International Security*, Vol. 32, No. 1 (Summer 2007), pp. 47–79. All parenthetical page references in this letter refer to the article. I discuss many of the general issues raised in MacDonald's letter in *Hierarchy in International Relations* (Ithaca, N.Y.: Cornell University Press, forthcoming).

hierarchy in international politics. Rather than focusing on formal-legal conceptions of authority in justifying the assumption of anarchy, as does most other international relations scholarship, my theory of international hierarchy holds that authority derives from a social contract in which a dominant state provides a social order in exchange for compliance by the citizens of a subordinate state. This leads to a set of predicted behaviors for both dominant and subordinate states, including the key hypothesis examined in the article that countries subordinate to the United States should spend less on defense as a share of gross domestic product (GDP) than nonsubordinates. MacDonald usefully challenges the theory, indicators, and statistical results presented in the article. I take up these challenges in sequence.

#### THEORY

MacDonald begins by criticizing my conception of hierarchy as “overly narrow.” This confuses a definition of hierarchy, which should clearly distinguish the construct from related concepts, and a theory of hierarchy, which explains where it comes from and how it works. I follow political theorists in defining authority as rightful or legitimate rule and hierarchy as a socially constructed authority relationship between a legitimate ruler and the ruled (p. 50). Actors with political authority are empowered to use coercion legitimately, but the adjective makes all the difference in separating rulers from bullies and subjects from victims (pp. 51–53). Some international relations scholars, apparently including MacDonald, want to call any stratified attribute of states a hierarchy, including stratifications of coercive capabilities already accurately described by the terms “distribution of capabilities” or “balance of power.” I restrict the definition of hierarchy to relationships of authority.<sup>2</sup> Many authority relationships do begin coercively. Most of today’s nation-states, for instance, were originally forged through conquest and violence. But for a relationship to be regarded as authoritative, it must possess at least a measure of legitimacy or “rightfulness”—as do many but not all contemporary states.

Alternatively, there are many possible theories of hierarchy. MacDonald seems to favor one focusing on ideational legitimacy. If the ambition is to understand hierarchy in the modern world, I do not believe this is a particularly promising avenue down which to travel. The central ideas of Westphalian sovereignty that dominate contemporary international politics are explicitly hostile to international hierarchy and deny the legitimacy of any country’s rule over another. These ideas certainly constrain the types of hierarchy that are possible in the contemporary world, but I do not see in current discourse any positive set of ideas or norms that would justify the legitimate domination of one state by another. I welcome alternative theories that portray international hierarchy in other ways. I do not claim that my theory is the only way to think about this complex phenomenon. But it is not sufficient to simply assert that ideas matter. If MacDonald and others believe that a social contract is an insufficient approach to theorizing about hierarchy between states, they should develop an alternative ideational theory, deduce its implications, and compare the evidence for and against that theory relative to mine. Scientific progress is the displacement of one flawed theory by a less

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2. Many readers will immediately recognize the distinction between Kenneth N. Waltz’s first and third dimensions of international structure. See Waltz, *Theory of International Politics* (Reading, Mass.: Addison-Wesley, 1979).

flawed theory. If my article stimulates such progress, I will have succeeded in my largest ambition.

#### MEASUREMENT

MacDonald argues that hierarchy is such a subtle relationship that it cannot be measured but can only be assessed through detailed case studies. As the vast majority of my published work makes clear, I appreciate the value of case studies, especially when variables are hard to measure.<sup>3</sup> Yet case studies do not obviate the need for clear operationalizations of theoretical constructs. A case study of, say, how the hierarchy of the United States over Japan led to lower defense spending in that country would still need to operationalize the concept to make clear comparisons: Is Japan more or less subordinate to the United States than other countries with different levels of defense spending? How would we know Japan's degree of subordination independent of the set of behaviors such as defense spending that we ultimately wish to explain?

I offer four indicators, two each for security and economic hierarchy, that rest on observable differences across countries and are reasonable proxies for hierarchy in the modern era (pp. 61–67). These measures are intended to capture the more or less discretionary nature of the ties between dominant states and subordinate states, and thus the conferral of authority by the latter on the former (p. 68). Subordinates confer authority on a dominant state when they accept its troops on their soil (or fail to demand their removal after an extended time) or use its currency as their own. Likewise, states are indirectly signaling that they recognize the authority of the dominant state when they fail to make efforts to diversify their alliances or trading partners. As legitimacy is conferred by subordinate states rather than claimed by dominant states, authority exists (or not) independent of the assertions of the latter. Perhaps most important, the discretion in these ties and their nonetheless enduring nature clearly separate these measures of hierarchy from those intended to capture more purely coercive relationships between states.

MacDonald challenges the validity of these indicators. In my article, I attempt to demonstrate their face validity (especially Figures 1 and 2) and convergent and discriminant validity (pp. 68–70, especially Table 1). MacDonald highlights several cases that, in his view, defy common sense. But do we really know, to use his examples, that Canada is a “fully autonomous ally” whereas Japan possesses “little constitutional or practical autonomy”? A comparison that is apparently obvious to him is anything but obvious to me—and that is precisely the problem of relying only on intuitive and subjective assessments.

Some measures of theoretical constructs are always necessary. Theoretical concepts are never directly observable, and any measure will be imperfect, including such common international relations concepts as “power.” I do not claim that the measures I develop are without error. Indeed, I suspect there are a number of false negatives in which countries that I think may be subordinate to the United States in their security relations are actually classified as not subordinate. At the same time, I believe there are few false

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3. For cases and a research design on international hierarchy, see David A. Lake, *Entangling Relations: American Foreign Policy in Its Century* (Princeton, N.J.: Princeton University Press, 1999), especially pp. 71–76.



positives. If so, this systematic measurement error will make it more difficult to identify any effect of hierarchy on state behavior. I invite more creative scholars to develop better measures of international hierarchy than I have been able to identify and collect. As we gain better measures, we will be able to describe more precisely the pattern of hierarchy between states and explain more fully its effects on policy.

#### EMPIRICS

Finally, MacDonald claims that my empirical results are not robust to the exclusion of outliers and the inclusion of regional dummy variables. In reestimating my statistical models, MacDonald excludes ten country-year observations and finds that, although the coefficients generally retain the signs and approximate levels of significance originally reported, the size of the coefficients and the estimate of their substantive effects are greatly reduced. On inspection of the data, the country-years excluded by MacDonald are largely those in which defense spending skyrocketed during war or major conflict. Indeed, the excluded country-years with the greatest leverage in the results I reported (p. 74, Table 2) are Kuwait between 1990 and 1993, during which defense spending rose to more than 100 percent of GDP.<sup>4</sup> Dropping these high-leverage cases, however, eliminates important variation in the dependent variable. Lagged defense effort, for which I reported a coefficient of 0.66 (p. 74, Table 2, model 1), increases to almost 0.94 in MacDonald's estimates once the outliers are excluded. This implies that last year's defense effort is a near-perfect predictor of this year's defense effort.<sup>5</sup> With the lagged dependent variable absorbing nearly all the variance in the data, it is not surprising that the coefficients for security hierarchy and all covariates decline proportionately. Indeed, perhaps the only surprise is that there is any statistically significant effect of any variable on defense effort once the lagged value is "corrected" for the largest cases of year-to-year change. The appropriate way to interpret the new coefficients is that given a near-constant level of defense effort, and controlling for other factors, countries subordinate to the United States spend 0.16 percentage points less of their GDP on defense in any year relative to the last. This may still be a large number, depending on one's expectations about year-to-year change in defense expenditures.

Moreover, the lagged dependent variable likely incorporates the historic effect of hierarchy on defense effort. If U.S. security hierarchy is relatively static and affects defense effort in year one, and defense effort in year one is a good predictor of defense effort in year two, the true effect of hierarchy on defense effort in year two will be subsumed in part into the estimated effect of defense effort in year one (the lag). This implies that the total and year-to-year effects of hierarchy on defense effort may be substantially larger than any of these estimates suggests.

MacDonald's inclusion of regional fixed effects simply introduces multicollinearity into his models, with the usual result of masking the real effect of each variable. Fixed

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4. In an accompanying graph of security hierarchy and defense effort, MacDonald highlights unusually high defense spending by North Korea in 1958. This observation was dropped from all of my models, however, because of missing data on the economic hierarchy indicators.

5. Note also that the *R*-squared increases from 0.46 in my model to more than 0.91 in MacDonald's. Higher *R*-squares are usually a good thing, except when they are an artifact of manipulating a variable included only to offset problems of serial autocorrelation.

effects models are useful when we suspect that there are important omitted variables, in this case, at the regional level. By including a dummy variable for, say, the Middle East, the aim is to provide a proxy for an otherwise unmeasured variable(s) that is constant within the region. As MacDonald already makes clear in his letter, regions vary substantially in their average levels of hierarchy. As he discusses, South America is relatively subordinate to the United States, on average, whereas Africa is not. Although exceptions are evident in every region, there is a strong spatial clustering to U.S. hierarchy.<sup>6</sup> Given this clustering, regional dummy variables will correlate very highly with country-level measures of hierarchy. The regional dummies are not picking up the effects of omitted variables as intended, but rather are capturing some portion of the effect of security hierarchy. That neither the regional dummies nor security hierarchy is statistically significant suggests that they are largely substituting for each other in the regressions. Although country-level fixed effects may be appropriate checks on robustness in this case, as I report (p. 74, Table 2, model 2), regional fixed effects are likely capturing much of the same theoretical construct of international hierarchy. Theoretically derived concepts and measures—imperfect as they may be—are preferred to regional labels unless we have good reason to expect that omitted (regional) variables are a major source of bias.

#### CONCLUSION

Hierarchy has not been “loosed upon the earth.” Rather, it is a long-ignored and possibly repressed dimension of international politics that behooves us as scholars and citizens to try to understand. The challenge is especially but not uniquely important in light of the unipolar world we now inhabit. I agree with MacDonald that no single theory or set of measures is likely to capture the complex construct of hierarchy and all its implications. But every journey begins with a first step. I hope that my article helps persuade others to join those of us already in pursuit of a better understanding of international hierarchy on what I expect—but cannot guarantee—will be a rewarding and progressive trip.

—David A. Lake  
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6. I explore this issue in more detail in David A. Lake, “Regional Hierarchy: Authority and the International Order,” *Review of International Studies* (forthcoming).