

Comments on Benjamin Zyla's "NATO Burden Sharing: A New Research Agenda"

Jordan Becker, King's College London and NATO international military staff

In "NATO Burden Sharing: A New Research Agenda," Benjamin Zyla (2016) highlights some critical gaps in the current literature on this important topic. Here, I propose to build on Zyla's arguments to help improve the burden-sharing research agenda for scholars of various methodological traditions.

Zyla makes three general observations that are extremely important from both a theoretical and a policy perspective: First, that current burden-sharing studies are insufficiently connected to other relevant literatures in the field of international relations—drawing attention to the strategic culture literature and its relationship to burden sharing is particularly useful. Second, and relatedly, Zyla argues forcefully for the need to focus on new qualitative variables. Third, Zyla reminds readers that "grumbling" about transatlantic burden-sharing has a "long history."

I suggest this "long history" indicates that some of the fundamental structural causes of unequal transatlantic burden sharing that are central to the traditional literature Zyla criticizes still merit careful consideration. I concur with Zyla's observation that positivist work has generally neglected the "role of social forces, norms, beliefs, and values that are not derived from material interests." I contend, however, that nonmaterial variables can and should be modeled alongside material variables to gain a better understanding of the origins of burden-sharing behavior among allies. This contention informs my comments on Zyla's incisive discussion of the weaknesses of rationalist theories, as well as his proposed agenda.

My aim is to help rectify the disconnect between qualitative and quantitative research by offering paths for researchers to study qualitative and quantitative variables side by side, using quantitative work to inform qualitative case studies, and vice-versa.

Zyla identifies eight weaknesses of current rationalist theorizing on NATO burden sharing and then makes proposals for "new directions" in the study of burden sharing. Below, I walk through his critiques and proposals, offering some ideas on how we might incorporate important nonmaterial insights into our study of burden sharing without losing the valuable insights of rationalist work on the topic.

Zyla's Eight Critiques of Rationalist Theories

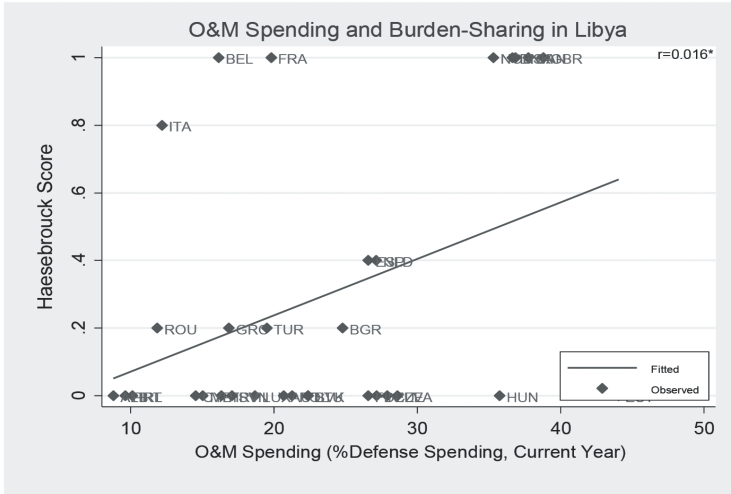
Zyla contends that public choice theories have failed to incorporate the role of expeditionary force capabilities.

Indeed they have, and this points to a larger issue with public choice work on burden sharing—scholars have not adequately disaggregated defense spending data in order to capture not only expeditionary *capabilities* but expeditionary *activity* in accordance with shared priorities. There are also a number of other issues that the use of aggregated, "top-line" defense spending leaves unaddressed. For example, which allies are spending on long-term alliance priorities not captured by near-term operational activity (such as investment in capabilities and equipment modernization) and which are spending more on personnel?

Fortunately, NATO has been disaggregating defense spending data into four categories (equipment, personnel, infrastructure, and "other," which critically consists primarily of

operations and maintenance [O&M] expenditures) since 1971 for personnel and equipment and since 1985 for infrastructure and O&M. Becker (2017) demonstrates the extent to which O&M spending among allies predicts the kind of operational burden sharing that qualitative studies (Haesebrouck 2016; Zyla, 2015) focus on. Figure 1 below visualizes the close correlation between O&M spending and Haesebrouck’s fuzzy-set score for operational burden-sharing in Libya. Figure 2 does the same for O&M spending and ISAF troop contributions.

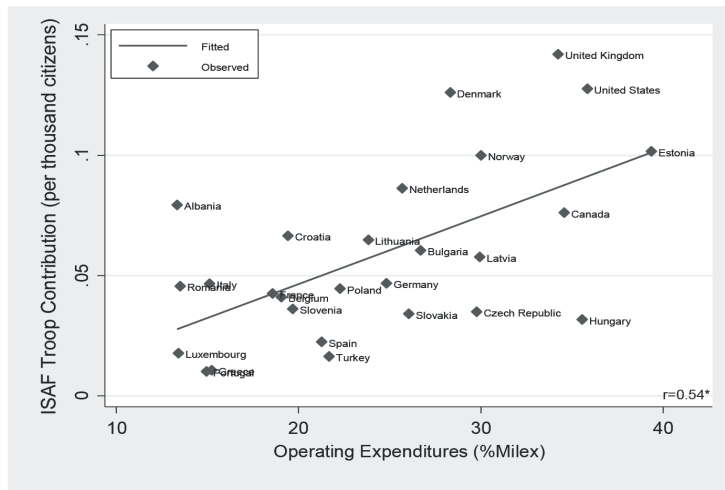
Figure 1.



Source: Becker, J. (2017)

Bivariate correlation between O&M expenditures and Haesebrouck’s fuzzy-set score for Libya operational burden sharing; this figure demonstrates the correlation between O&M spending and operational burden sharing during a single conflict over less than one year.

Figure 2.



Source: Becker, J. and Malesky, E. (October 17),

Bivariate correlation between O&M expenditures ISAF troop contributions per 1,000 citizens: this figure demonstrates the strong correlation between O&M spending and operational burden sharing during the entire period of the ISAF mission.

These examples of how disaggregating defense spending data into the four categories agreed by NATO allies (and since 2006 used by the European Defence Agency [EDA] as well) can address Zyla's concern with the incorporation of expeditionary force capabilities (and their use) are two among many covered in detail in Becker (2017).

Zyla contends that positivist burden-sharing models have not looked inside states or incorporated values.

The first portion of this critique, that positivist burden-sharing models have not looked inside states, appears to me to be incorrect. Various internal features of states have been addressed in positivist burden-sharing studies. Zyla is correct that the canonical literature frames alliance burden sharing as a collective action problem, identifying effects flowing from national wealth to overall defense investment (Olson and Zeckhauser 1966) and varying according to production technology (Oneal 1990) and the extent to which large states can exclude smaller states from benefits of their defense investment (Sandler and Hartley 1999).

However, the defense economics literature also includes a great many studies on the causes and effects of defense spending choices, conducted at the level of single states (Abell 1992; Aschauer 1989; Caruso 2012; Griffin, Devine, and Wallace 1982; Malizard 2014; Yildirim and Sezgin 2003), and multiple states (Tang, Lai, and Lin 2009; Lin 2012; Chang 2014; Pan 2014; Paul 1996; Zhong 2015; Ramey 2012). The issue is not that positivist scholars have not looked inside states but rather that such studies often fail to account for the full suite of variables proposed by the international security literature, and they offer conflicting results.

The second portion of Zyla's critique that the positivist literature fails to incorporate values touches this latter point. Becker and Malesky (2017) have proposed the use of Automated Content Analysis of national strategic documents to extract and measure one dimension of national strategic culture (Atlanticism) and to assess its relationship with material burden sharing behavior. This type of work can help bridge the positivist-constructivist gap that Zyla so insightfully identifies. Rather than jettisoning positivist methods, I suggest incorporating strategic cultural variables into the modeling techniques used by positivist scholars. Doing so allows scholars to gauge tendencies across many states and over long time periods and can point us in fruitful directions for more detailed case studies.

Zyla contends that "states do not exclusively seek relative but also absolute gains in their burden-sharing, decision-making process, following a logic of appropriateness. In turn, those practices must be contextualized in the explanations, in addition to what domestic variable analyses are able to offer."

I share Zyla's view here. I suggest that in addition to contextualizing burden-sharing practices, we can also analyze them in more traditional ways, such as those proposed above, or, for example, by examining the effect of the NATO Defense Planning Process (NDPP) and the related Wales Pledge on Defense Investment on Allies' burden-sharing behavior.

Positivist analytical methods allow us to model such nonmaterial variables *alongside* domestic variables *and* the canonical variables highlighted by the public choice and international security literature—namely national wealth and threat-related variables. In particular, we can use quantitative differences in behavior between NATO allies and non-NATO states that are members of the EU to help assess the effect of NATO-specific attempts at collective action.

Zyla critiques the canonical public choice theorizing on burden sharing (Olson & Zeckhauser, 1966) for failing to model the defense of the alliance as not exclusively a pure public good and as producing multiple outputs.

I contend this claim is unfair to the vast array of public choice literature that has flowed from Olson and Zeckhauser's fundamental work. Joint product theorizing on burden shar-

ing (Sandler and Hartley 1999; Sandler T. 1993; Sandler and Forbes 1980; Sandler and Hartley 2001) has explored, theorized, and tested a variety of hypotheses regarding the extent to which defense is purely public. Incorporating these insights into models of burden-sharing behavior that also include nonmaterial variables is consistent with Zyla's entreaties to broaden the scope of burden-sharing analysis.

Zyla asserts that "the collective action models presume that allies decide on the size of their contributions in isolation—that is without consulting their allies and partners."

Zyla is certainly correct to note the importance of the cooperative nature of alliances and particularly NATO. NATO allies systematically coordinate their contributions in the NDPP. The collective action models do not necessarily presume that allies do not coordinate; the question is, rather, how to model this coordination and evaluate its effects. Spangler (2017), for instance, highlights the utility of adding non-NATO EU members into economic models. This approach would be particularly fruitful for addressing the extent to which the formalized consultation process in NATO affects burden-sharing behavior.

Zyla reiterates the "forms of contribution" critique made in his first point.

I contend this critique can and should be addressed, at least initially, by simply disaggregating the available quantitative data in the ways discussed above. Doing so can lead us to a more nuanced understanding across allies and can help identify fruitful areas in which to conduct more detailed case studies using different methodological tools. This is an avenue that has not been adequately explored.

Zyla contends that the public good model is static.

The many studies that find their lineage in the public good model include a great number that make use of dynamic models. Perhaps the most notable among these is "Buttery Guns and Welfare Hawks," in which Whitten and Williams (2011) develop a series of dynamic simulations to test their hypothesis that "some governments may use military spending as a means of advancing their domestic non-military objectives"—behavior that is at the center of NATO burden-sharing debates. Becker and Malesky (2017) also use a dynamic Error Correction Model to estimate the effects of a shift in strategic culture over time.

Zyla contends that the collective action model does not withstand empirical analysis.

Empirical analysis (Becker, 2017) has identified several shortcomings of the collective action models of defense spending and burden sharing. I contend, though, that in order to conduct empirical analysis that addresses these shortcomings over a long period of time and across the now twenty-nine NATO allies, or the thirty-five states that are currently either NATO or EU members, large-*n* quantitative studies need to be part of our methodological toolkit.

Implications and New Directions

Zyla's discussion of the implications of his critique of the positivist burden-sharing literature focuses on the role of strategic culture in shaping state preferences and, ultimately, burden-sharing behavior. The idea that strategic culture belongs in the burden-sharing discussion should, by now, be uncontroversial. The question is *how* to include strategic culture in a mutually intelligible discussion taking place across methodological divides. Alastair Iain Johnston (1995) aptly characterized this difficulty long ago: "The problem for structuralists is to explain differences in strategic behavior across strategic cultures when structural conditions are constant . . . [and] the problem for culturalists is to explain similarities in strategic behavior across varied strategic cultures."

Beyond noting that strategic culture belongs in the burden-sharing discussion, Zyla identifies three areas in which strategic culture can be usefully integrated into the conversation: First, he notes that strategic culture could be a relevant variable for understanding “what things [allies] pay for when NATO is asking for funding or troops for military operations.” Operationalizing strategic culture, via Automated Content Analysis or other methods, and disaggregating defense expenditures is one way to do this quantitatively. Quantitative studies of this nature have a value of their own and can also help orient qualitative studies that would provide additional value. This approach also addresses Zyla’s second point regarding future research—that strategic culture or “ideational variables” should be evaluated as intervening or independent variables affecting alliance behavior.

Using Automated Content Analysis of national strategic documents to operationalize strategic culture also helps with Zyla’s third point regarding future perspectives: That strategic culture is resistant to change and, therefore, “one would expect longitudinal cultural continuity, which could be studied.” By using Automated Content Analysis to analyze national strategic documents, Becker and Malesky (2017) found that the Atlanticist/Europeanist dimension of strategic culture among allies was stable over time but not static; it varies not only across but within countries over time. This variation can indeed be studied, and I hope that Becker and Malesky’s piece is the first among many to make use of this strategy for operationalizing strategic culture.

Concluding Remarks—Closing Gaps

Finally, Zyla indicates that there are two critical gaps in the strategic culture literature. First, it is “too coherent” and “too continuous”; he argues that “certain models of strategic culture do not allow for changes in strategic behavior suggesting strategic-cultural continuity and remain overly descriptive rather than analytical.” Here again, the use of Automated Content Analysis to operationalize strategic culture in a way that avoids opportunistic analysis designed to validate analysts’ priors can be of help. Rather than argue about whether or not strategic culture *should* theoretically vary over time, Becker and Malesky use a relatively new methodological tool to evaluate *if* and *how much* it has varied over time, and they find that strategic culture is indeed stable, but it is *not static*. This finding is consistent with much theorizing on strategic culture but takes the important step of operationalizing this within-country variation to move from description to analysis.

This operationalization technique and its implications also address Zyla’s critical concern that “while the positivist literature on burden sharing cherishes the quantitative measuring of variables, the constructivist literature on alliances has yet to find an answer to the question whether ideas can be measured and ranked vis-à-vis competing ideas as well as how they can be compared to those material variables.” By using Automated Content Analysis to score national security documents Becker and Malesky propose one way of measuring and ranking a dimension of strategic culture. By using that dimension as an independent variable and assessing its effect on operational burden sharing in a multivariate model, they compare it to a series of material variables. And by adding it to models assessing the effects of unemployment and fiscal rules on burden sharing behavior, Becker (2017) links strategic culture to the domestic political economies of allies. I contend that doing so opens countless opportunities to address the flaws in the existing burden-sharing literature that Zyla has so insightfully identified.

REFERENCES

- Abell, J.D. (1992). Defense Spending and Unemployment Rates. *American Journal of Economics and Sociology* 51.1, 27–42.
- Aschauer, D.A. (1989). Is public expenditure productive? *Journal of monetary economics* 23.2, 177–200.
- Barker, T., Dunne, P., and Smith, R. (1991). Measuring the peace dividend in the United Kingdom. *Journal of Peace Research* 28.4, 345–58.

- Becker, J. (2015). Rusty Guns and Buttery Soldiers: The Effect of Unemployment on Transatlantic Defense Spending. *Under Review, Available at SSRN*.
- Becker, J. (2017). The Correlates of Transatlantic Burden Sharing: Revising the Agenda for Theoretical and Policy Analysis. *Defense & Security Analysis*, 33(2), 131–57.
- Becker, J. and Malesky, E. (2017). The Continent or the Grand Large? Strategic Culture and Operational Burden-Sharing in NATO. *International Studies Quarterly*, 61(1), 163-80.
- Caruso, R. and Francesco, A. (2012). Country survey: military expenditure and its impact on productivity in Italy, 1988–2008. *Defence and Peace Economics* 23.5, 471–84.
- Chang, T., Lee, C-C., Hung, K., and Lee, K-H. (2014). Does military spending really matter for economic growth in China and G7 countries: The roles of dependency and heterogeneity. *Defence and Peace Economics* 25.2 , 177–91.
- Griffin, L.J., Devine, J.A., and Wallace, M. (1982). Monopoly capital, organized labor, and military expenditures in the United States, 1949-1976. *American Journal of Sociology*, S113-S153.
- Haesebrouck, T. (2016). NATO Burden Sharing in Libya: A Fuzzy Set Qualitative Comparative Analysis. *Journal of Conflict Resolution*, DOI: 10.1177/0022002715626248, 1-27.
- Huang, J-T. and Kao, A-P. (2005). Does Defence Spending Matter to Employment in Taiwan? *Defence and Peace Economics*, 101–115.
- Johnston, A.I. (1995). Thinking about Strategic Culture. *International Security*, 19(4), 32–64.
- Lin, P-S. and Lee, C-T. (2012). Military spending, threats and stochastic growth. *Bulletin of Economic Research* 64.1, 8–19.
- Malizard, J. (2014). Defense Spending and Unemployment in France. *Defence and Peace Economics* 25.6 , 635–42.
- Olson, M., & Zeckhauser, R. (1966). An Economic Theory of Alliances. *The Review of Economics and Statistics*, 266–79.
- Oneal, J.R. (1990). The Theory of Collective Action and Burden Sharing in NATO. *International Organization*, 379–402.
- Pan, C-I., Chang, T., and Wolde-Rufael, Y. (2014). Military spending and economic growth in the Middle East countries: bootstrap panel causality test. *Defence and Peace Economics*, 1–14.
- Paul, S. (1996). Defence spending and unemployment rates: an empirical analysis for the OECD. *Journal of Economic Studies* 23.2 , 44–54.
- Ramey, V.A. (2012). Government spending and private activity. No. w17787. *National Bureau of Economic Research*.
- Sandler, T. (1993). The Economic Theory of Alliances: A Survey. *Journal of Conflict Resolution*, 37(3), 446–83.
- Sandler, T.M. and Hartley, K. (1999). *The political economy of NATO: past, present, and into the 21st century*. Cambridge University Press,.
- Sandler, T. and Forbes, J. (1980). Burden Sharing, Strategy and the Design of NATO. *Economic Inquiry*, 18(3), 425–44.
- Sandler, T. and Hartley, K. (2001). Economics of Alliances: The Lessons for Collective Action. *Journal of Economic Literature*, XXXIX(September), 869–96.
- Spangler, E. (2017). Allies with Benefits: US Effect on European Demand for Military Expenditures. *Defence and Peace Economics*, 1–17.
- Tang, J-H., Lai, C-C., and Lin, E.S. (2009). Military expenditure and unemployment rates: Granger causality tests using global panel data. *Defence and Peace Economics* 20.4, 253–67.

- Whitten, G.D. and Williams, L.K. (2011). Buttery Guns and Welfare Hawks: The Politics of Defense Spending in Advanced Industrial Democracies. *American Journal of Political Science*, 55(1), 117–134.
- Yildirim, J. and Sezgin, S. (2003). Military expenditure and employment in Turkey. *Defence and Peace Economics* 14.2, 129–39.
- Zhong, M., Chang, T., Tang, D.P., and Wolde-Rufael, Y. (2015). The causal nexus between military spending and unemployment in the G7: a bootstrap panel causality test. *Defence and Peace Economics*, 1–14.
- Zyla, B. (2015). *Sharing the Burden?: NATO and Its Second-tier Powers*. Toronto: University of Toronto Press.
- Zyla, B. (2016). NATO Burden Sharing: A New Research Agenda. *Journal of International Organization Studies*, 7(2), 5–22.