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ABSTRACT

In this manuscript I present a rapid evidence assessment of articles that use quantitative methods to analyze peace and conflict dynamics, and topics relevant to conflict processes, in temporal domains that include periods before 1816. The study of pre-modern international relations using quantitative methods is a minority endeavor in the field. Using a semi-random sample of 54 articles published between 1970-2015 I familiarize scholars with this scholarly corpus. I evaluate what that corpus can tell us about the argument that the pre-1816 period is to different from the post-1816 period for useful cross-period comparison. The findings do not support such an argument of difference.

Keywords: Rapid Evidence Assessment, International Conflict, Peace Science, Review, Transformation

Sisli Denizdeki Adalar: 1816 Öncesi Döneme Dair Sayısal Araştırmalar için Bir Hızlı Bulgu Değerlendirmesi

ÖZET

Bu makalede, 1816 yılı öncesi zaman dilimlerinde barış ve çatışma dinamiklerini ile çatışma süreciyle alakalı konuları niceliksel yöntemler kullanarak inceleyen makaleleri içeren bir hızlı bulgu değerlendirmesi sunulmaktadır. Alanda, modern dönem öncesi uluslararası ilişkilerin niceliksel yöntemler kullanılarak çalışılmasına nadir olarak rastlanmaktadır. Bu çalışma, 1970-2015 yılları arasında yayınlanan yarı-rastgele (semi-random) örneklemlenmiş 54 makaleyi kullanarak bu bilimsel alanı akademisyenlere tanıtmayı amaçlamaktadır. Bu bilimsel alanın, 1816 öncesi dönemle 1816 sonrası dönem arasında anlamlı periyotlar arası karşılaştırmalar yapılanamayacak kadar büyük farklılıklar olduğunu belirten tartışmalar hakkında da neler gösterebileceği değerlendirilecektir. Bulgular böyle bir farkın var olduğunu belirten tartışmaları desteklememektedir.

Anahtar Kelimeler: Hızlı Bulgu Değerlendirmesi, Uluslararası Çatışma, Barış Bilimi, Dönüşüm

Introduction

A classic analogy used to describe the corpus of a scientific field is that of islands of knowledge. As the islands become connected, consilience increases solidifying the field's status as a science. This is the case when it comes to the post-1816 temporal domain quantitative study of interstate conflict. Through the work of researchers, and organized endeavors like the Correlates of War, Issue Correlates of War, or Uppsala Conflict Data Project, both the recent past and the future as it is revealed are analyzed and connected into a whole. However, when one turns to studies focusing on periods before 1816, the picture is one of islands in a sea of fog. There are spots of knowledge but these are few and far between, seldom connected to each other or to the post-1816 findings. My goal in this manuscript is to help promote the quest of consilience in the study of intestate conflict by conducting a Rapid Evidence Assessment (REA) of a sample of 1970-2014 quantitative studies relevant to interstate conflict. This is in order to create a map of findings and datasets that cover the pre-1816 period.

One immediate question is whether this endeavor is worthwhile. The pre-1816 period might be so different from the post-1816 period that the findings for one will have no bearing on the other. Put differently, bridging the islands of knowledge may be useless because they are on different planets. There are definite disagreements among scholars about the magnitude of difference. Scholars of the classical tradition see an unchanging landscape stretching back to hallowed antiquity. Within the quantitative tradition schools like the Long Cycle Research Program consider the past equally important to the present as topic of study.[1] Others, like the Power Transition Program, tend to consider the transformation brought about by the industrial revolution as rendering the pre-industrial past an alien space.[2] How different, if at all, are pre and post-1816 international relations according to the findings reviewed?

Using the data produced by the REA, one can evaluate that question by looking at whether these studies really find that the past is radically different from the present. Many of the studies cover temporal domains that span the pre and post 1816 period. And for others we can compare with what we know about interstate conflict in the modern period.[3] I look for indictors of difference *via* two tracks. First I look at whether scholars in my sample of articles note that their findings indicate difference between the pre and post 1816 period. On a second level I conduct a statistical evaluation of the relationships uncovered between the independent variables of the articles and categories of dependent variables that are associated with military conflict dynamics. The results are then put into juxtaposed with what we know about interstate wars and militarized disputes in the post-1816 era.

The manuscript proceeds as follows. In the next section I discuss the methodology used. I then briefly discuss reasons to expect difference between the pre and post 1816 period. I then describe the articles and data, placing them within the general corpus of quantitative conflict research. This is followed by a substantive description covering topics such as data sources for the articles, comparative statics on temporal and spatial domains used, use of variables, and findings. The final section focuses specifically on the empirical evaluation of the question of differences between findings in the pre-1816 period and post-1816 period.

1 See G. Modelski and W. Thompson, "Long Cycles and Global War", Manus Midlarsky (Ed.), *Handbook of War Studies*, Ann Arbor, University of Michigan Press, 1989.

2 A.F.K. Organski and J. Kugler, The *War Ledger*, London, University of Chicago Press, 1981.

3 A good overview is J. A. Vasquez (Ed.), *What do we know about War?*, New York, Rowman & Littlefield Publishers, 2012.

Meta-analysis and Rapid Evidence Assessment in Conflict Studies

Meta-analysis, including the more basic rapid evidence assessment (REA), is rarely used in the study of international relations. This was the case more than thirty years ago, and still is today.[4] However, exceptions exist. The Teaching, Research, and International Policy (TRIP) project has led to some meta-analysis studies.[5] There have been past meta-analysis projects focusing on democracy and economic growth, negotiation behavior, and instrumental variables.[6] Specifically on questions of conflict dynamics the last meta-analyses or rapid evidence assessments done were by Vasquez in 1976, Eberwein in 1981, and Leng in 1999.[7] None of these analyses focused on findings associated with specific periods of international history, and most of them focused on the works covering the post-1816 period. This project attempts to rectify that gap as well as promote the use of these tools for the study of our field.

The rarity of meta-analysis in the quantitative study of conflict is largely due to the youth of the field. The tool itself has an established pedigree in more developed fields like Medicine. But the very youth of the scientific study of international relations has limited its use. Meta-analysis is a tool of scientific consilience, fostering the convergence of researchers to the use of the same instruments for asking interlocking questions. While consilience is promoted by some scholars, this is far from a universally pursued goal.[8] Debates on epistemology and methodology, as well as a commitment to intellectual diversity mean that the scientific study of international relations is still a protean social science. As a result tools of a "mature" science, like meta-analysis, tend to be less used. To this we must add another consequence of the youth of our field, the quality of data available for meta-analysis. Our quantitative data is not as rich as that of more established fields, which can dampen the benefits of meta-analysis. Finally meta-analysis is a very labor intensive process, and considering the state of the field the result may have a small impact. Thus researchers with scarce resources are apt to spend them on potentially more fruitful endeavors.

The above factors cannot stand as legitimate reasons for avoiding such a tool of field introspection. Even if data is not sophisticated enough for a full meta-analysis, it is adequate for a REA. We should use the best tool available, and REA is it at this stage of field maturity. Furthermore, such endeavors may lead to the initiation of research programs in response to the trends unearthed by a REA. The Steps to War research program is such an example. Moreover, such analyses of the field can help newer scholars keep appraised of what has been done, so as to avoid research programs that retread the same ground as past ones. This protects paradigms from de-generation.[9] Finally, they

4 See J.A. Vasquez, "Statistical Findings in International Politics", *International Studies Quarterly,* Vol.20, No.2, 1976.

5 For example see D. Maliniak and M. J. Tierney, "The American School of IPE", *Review of International Political Economy,* Vol.16, No.1, 2009.

6 On democracy and economic growth, see H. Doucouliagos, and M.A. Ulubaşoğlu, "Democracy and Economic Growth: a meta-analysis", *American Journal of Political Science,* Vol.52, No.1, 2008. On negotiation behavior, see D. Druckman, "Determinants of Compromising Behavior in Negotiation A Meta-Analysis", *Journal of Conflict Resolution,* Vol.38, No.3, 1994. On instrumental variables, see A. J. Sovey and D.P. Green, "Instrumental Variables Estimation in Political Science: A readers' guide", *American Journal of Political Science,* Vol.55, No.1, 2011.

7 See Vasquez, "Statistical Findings in International Politics"; also see W. D. Eberwein, "The Quantitative Study of International Conflict: Quantity and Quality? An Assessment of Empirical Research", *Journal of Peace Research,* Vol.18, No.1, 1981, p.19-38; R. J. Leng, "Cumulation in Qjp: Twenty-Five Years after Ojai", *Conflict Management and Peace Science,* Vol.17, No.2, 1999.

8 See for a supporter J.A. Vasquez, "The Realist Paradigm and Degenerative versus Progressive Research Programs: An Appraisal of Neotraditional Research on Waltz's Balancing Proposition", *American Political Science Review,* Vol.91, No.4, 1997.

9 See Vasquez "The Realist Paradigm" for the use of the criticism of paradigmatic degeneration.

can function are repositories of research design information, essentially the quantitative history of a field. For these reasons and despite the challenges, periodic rapid evidence assessments, or full meta-analysis where appropriate, can be of use even in a diverse field as the study of international conflict.

A Question of Difference

One of the main benefits of conducting a REA of research conducted in temporal domains that include the pre-1816 period, is to help shed some light on the question of how different the pre and post 1816 period is. This is important because if the differences are too transformative, the study of one period might be meaningless for the other. Furthermore new arguments of transformation have arisen in the recent literature, these focusing on 1945 as a transformation date.[10] This question of difference is still relevant in the field.

When it comes to the pre and post 1816 period, arguments for transformation tend to focus on material changes due to the Industrial Revolution and the global expansion of the World System. However these are changes that only matured in the later 19th century. Others, like Paul Schroeder and the author, focus on 1816 as the key date.[11] In this case the transformation is ideational. The Congress of Vienna, put in effect in 1816, heralded a new era in how states conceptualized international relations. This process was the end result of the impact of the enlightenment on political thinking and especially the invention of the concept of dynamic, as opposed to cyclical, time with its expectation of progress.

Rationalism led to the concept of major power being given legal form at the Congress of Vienna. Progressivism led states to see interstate managerial coordination as not an opportunistic and brief policy of advantage, but as a more long term way to manage international relations and decrease the incidence and costs of war. While these ideas have waxed and waned since 1816, at no time have the members of the interstate system given up on some form of managerial coordination. They never permanently returned to the free-wheeling politics of the 18th century.

How much does this ideational change actually impact the dynamics of war and peace before and after 1816? Does the transformation render the pre-1816 past alien? Or is it one of degrees and variations around a stable axis? Using the data of this REA we can begin a preliminary exploration of these questions. One need not focus exclusively on the 1816 date. Findings that show no difference, or show difference, between antiquity, the 17th, 18th, 19th or 20th centuries have implications not only for 1816, but also 1648, 1900, 1945, and 1990 as potential transformation dates.

The Data

The data is extracted from 54 article manuscripts written between 1970 and 2014. Thirteen of those are from a semi-random sample. Added to these thirteen are 41 research articles (including research notes, excluding reviews or correspondence) extracted from *International Interactions*, the *Journal of Conflict Resolution*, and *International Studies Quarterly*. The use of the articles that were part of the

10 Recent examples are Goertz *et.al., The Puzzle of Peace: The Evolution of Peace in the International System*, New York, Oxford University Press, 2016; and N. P. Monteiro, *Theory of Unipolar Politics,* New York, Cambridge University Press, 2014.

11 P.W. Schroeder, *The Transformation of European Politics, 1763-1848*, New York, Oxford University Press, 1996; and K. Travlos, *From Warmongers to Peacebuilders: Major Power Managerial Coordination and the Transformation of International Relations, 1715-2001,* Unpublished PhD dissertation, University of Illinois at Urbana-Champaign, 2014.

semi-random sample is only justified on the basis that while there was selection bias in their collection, this bias was not the result of the goal of this study (as their collection predates the study). Rather, those articles had been purposefully chosen in the past for other tasks, but not for this task, and thus their use as an addition to the more organized sample taken for this paper avoids some bias issues.

The choice of journals is driven by three factors. First, I wanted to focus on journals that specialized in the propagation of the quantitative study of international conflict. This led me away from more general political science journals, and those that did not publish a large amount of quantitative articles on international conflict. Second, I wanted journals in publication at least since 1970. Finally I wanted to avoid journals that were for a long period associated with specific schools of thoughts in the quantitative study of international conflict. The goal was to tap into those journals most likely to publish a wide range of quantitative papers studying international conflict in the pre-1816 period. Finally there is diminishing relationship between resources expended and insight gained when adding additional journals.

With help from two assistants, Ufuk Turkhan and Nikos Vouchiounis, I analyzed 3.430 articles published between 1970 and 2014 in the journals. Of these 3.430 articles, 41 or 1% met the criteria for inclusion in the data. One first conclusion we can draw is that quantitative studies that cover pre-1816 temporal ranges may be a very small minority of published work. This is not completely surprising as the majority of extant datasets begin in 1816. This is because the original Correlates of War data sought to use newspaper resources in addition to secondary and primary sources. Newspaper availability before 1816 is problematic for reasons of circulation, archival availability, and a local thematic focus by most newspapers of the time. Thus the decision to begin the dataset in 1816 was partly driven by a lack of available national circulation newspapers before that date. Due to path dependency subsequent datasets also followed that starting date, despite increases in archive availability with the information revolution.

The data indicates that the main period of publication activity of quantitative studies including temporal ranges before 1816, was the 1980s-1990s. There are two distinct activity peaks. These are the decade between 1977 and 1987, and the decade between 1990 and 2000. After 2000, activity drops with some manuscripts still published in *JCR* and *ISQ*. Of the three journals, *II* has the lowest average percentage of published manuscripts (0.8% 6 of 715), with *JCR* having a 3% average (17 of 1500), and *ISQ* 3.7% (18 of 1213). One can say that there are indicators that this tradition of research is not currently a high priority.

Each article was then broken down into a set of factors for data processing. These are both descriptive and substantive. Information is collected on the following categories: cases used in the research design, temporal domain, whether the article is primarily presenting data or using it for evaluation, whether it focuses on explaining war dynamics, the dependent variable or concept being explained in detail, the dependent variables or concept explained collapsed into 18 categories, the independent variables used in detail, and the independent variables collapsed into 25 categories. This collapsing is necessary and will be discussed in detail, though it must be confessed to be the most subjective part of the research design. To address the question of difference I also coded whether the research found indicators of differences between the post-1816 and pre-1816 period, what the relationship between the dependent and independent variable was, and finally if the relationship was changing, whether that change was due to temporal period, case variation, or by type of operationalization.

This information is compiled into a dataset in which the unit of analysis is the independent variable use. Each independent variable in an article is an observation. For each is compiled it's detailed category, it's collapsed category, and the information from all the other factors. This produces 175 observations. The average count of independent variables used per article was about 2, which was also the median. The largest number was 7 variables, and the smallest number, one. These conservative numbers, compared to findings of REAs for research focusing on more recent temporal domains, are probably due to the lack of data on factors in the pre-1816 period rather than any epistemological prudence on the part of the authors.[12]

In total there were 104 independent variables (which were used 175 times), and 40 dependent variables/or concepts explained, when using the detailed factor category. In this case each variable is considered unique, with only the very similar counted as the same. The online appendix contains the code book with the list of variables, as well as the coding notes kept per article so as to provide full information to readers on operationalization. Because a substantive analysis of 144 variables would be cumbersome it was decided to collapse them into broader categories. This process of matching variables to categories was subjective. In most cases the matching is straightforward, but there are also cases in which a different researcher would make a different decision. This is encouraged as the collapsed categories are just a way to use the core data for analysis. Different interpretations of that core data are expected and welcome. But for this specific use of the data, the interpretations used are the ones presented in the online appendix (Appendix Part III).[13]

Before moving on to exploring what that data can tell us about causal relationships there is some more descriptive information worth considering on author identity. The most prolific author in the data is W. R. Thompson with 18 of 53 manuscripts (34%) attributed to him either as solo author or as co-author. The next most prolific are J. S. Levy with 7 manuscripts, C. Cioffi-Revilla with four[14], and D. Sobek with two. Seven of 53 manuscripts had a female author or co-author (13%). The most prolific female author is K. A. Rasler.

We can now move to the substantive descriptive part of the paper. In this part I look at descriptive information focusing on variable usage, temporal domains, preference for cases, and the kind of data was used.

Substantive Description

Let us begin with the data used in the articles. Despite the smaller effort put by the field into charting the past, there is a richness of data in these islands of knowledge. About 40% of the articles focused on presenting original data. In Table 1, I collect some basic information on those datasets.

12 See indicators of this in G. Rudkevich and K. Travlos, "Do We Know Too Much about Military Conflict? A Rapid Evidence Assessment of Quantitative Explanations of Interstate Conflict Onset", paper presented at International Studies Association Convention, 2014, Toronto, Canada.

13 The Online Appendix contains the Codebook, the detailed interpretations of collapsed variables, and the narratives for all articles used in this study. It can be accessed at http://ktravlospolisci.blogspot.com.tr/p/replication-data.html.

14 C. Cioffi-Revilla, "Origins and Evolution of War and Politics", *International Studies Quarterly,* Vol.40, No.1, 1996, p.1-22; C. Cioffi-Revilla and D. Lai, "War and Politics in Ancient China, 2700 BC to 722 BC Measurement and Comparative Analysis", *Journal of Conflict Resolution,* Vol.39, No.3, 1995, p.467-494; C. Cioffi-Revilla and D. Lai, "Chinese Warfare and Politics in the Ancient East Asian International System, CA. 2700 BC to 722 BC", *International Interactions*, Vol.26, No.4, 2001, p.347-378; C. Cioffi-Revilla and T. Landman, "Evolution of Maya polities in the ancient Mesoamerican system", *International Studies Quarterly,* Vol.43, No.4, 1999, p.559-598.

Table 1. Datasets used or presented in the sample extending before 1816.

Title	Authors	Temporal Space	Cases	Notes
Great Power War List	J.S. Levy	1495-1975	Great Powers	War dataset, includes information on frequency, severity, extent, intensity, concertation and duration of wars.
Thompson Polarity Data	W.R. Thompson	1494-1983	Great Powers and Global Powers	Periods of different polarity. Uses the Modelski-Thompson naval concentration dataset.
Thompson Long Cycle-Concertation Data	W.R. Thompson	1494-1945	Great Powers and Global Powers	Combines data on Long Cycle with Naval and Land concertation datasets.
Long Economic Wave Data	W.R. Thompson	1490s-1790s	Great/ Global Power System	Long Economic Waves Data
Iroquois League Wars and Treaties	N.C. Crawford	Wars:1450-1770 Treaties: 1677-1755	Iroquois Confederacy, other North – East American polities	Data on the military and diplomatic activity of the Iroquois Confederacy.
Principal Rivalries	W.R. Thompson	16th-18th centuries	Great Powers and Global Powers	The origin of the concept and data on Strategic Rivalries
1648-1815 Alliance Dataset	D.M. Gibler	1648-1815	European Interstate System	A list of alliances in the European interstate system between 1648-1815
Italian Polity and War Data 1250-1494	D. Sobek	1250-1494	Italian Polity System	Data on 7 polities in Late Medieval and Renaissance Italy. Includes War onset data, Polity Data, Regime Similarity Data (independent to Polity data), Contiguity, Power and Preponderance Data.
Machiavellian Index	D. Sobek	1250-1494 and 1920-1992	Italian Polity System, and Modern Interstate System	Adds data on "Imperial Regimes" regime type to the Italian Polity and War Data 1250-1494.
Leading Land Power Data	J.S. Levy and W.R. Thompson	1495-1999	European Great Powers	Data on leading European Great Power in land power.
Bronze Age Political Crises	W.R. Thompson	4000-1000 BCE	Ancient Mesopotamian and Egyptian polities	Data on Political Crises, Climate Deterioration for Ancient Mesopotamia and Egypt
Sea-power Primacy Data	J.S. Levy & W.R. Thompson	1494-1995	Great Powers and Global Powers	Data on Naval Leadership in the system. Based on Modelski and Thompson sea-power data.
Political Development Data 1500-1800	K. Karaman & S.Pamuk	1500-1800	12 European Major States	Data on Tax Revenue, War casualties, urbanization rates, and prerogative over taxation for 12 states.
Monarch and Monarchy Succession System Data	A. Kokkonen & A. Sundell	1000-1800	42 European States/Polities	Dataset on 961 monarchs and systems of succession. Includes data on executive constraints, religion, succession events, succession systems.

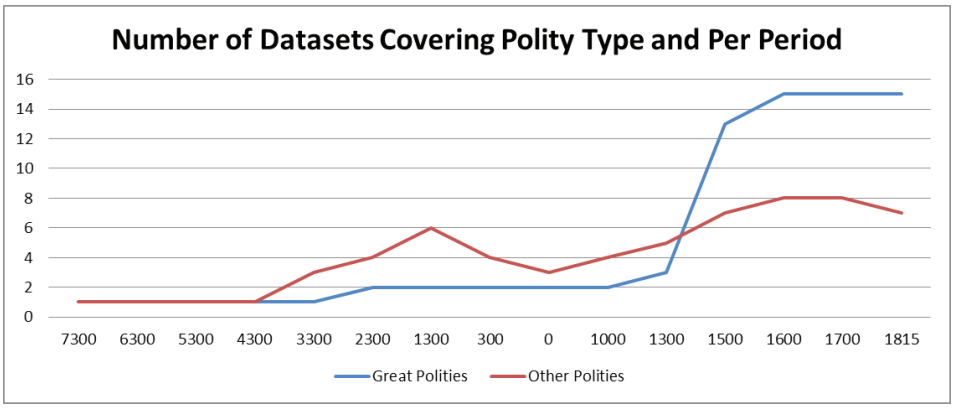
Table 1 Continued

Title	Authors	Temporal Space	Cases	Notes
Polarity and War Data for Ancient China	C. Cioffi Revilla & D. Lai	2700-722 BCE	Ancient China	Data on polarity and war frequency in Ancient China. 104 cases, 12 variables.
General War Cycle List	M. Melko	2119 BCE-1945	11 Civilizations	Lists General War Cycles. Six Categories of General Wars.
Colony Data 1500-1987	D. Strang	1500-1987	Major Powers	Data on Western Colonial Dependencies
Major Power Initiator Data	K. Wang & J.L. Ray	1495-1991	Major Powers	Updates Levy War data with information on Initiators.
Long-Range Analysis of War Dataset (LORANOW)	C.Cioffi-Revilla	7300 BCE-747	Mesopotamia, China, Meso-america, Nubia, Andes	Data on 2300 war onsets
Mayan Polities Dataset	C. Cioffi-Revilla & T.Landman	800 BCE-1700	Mayan Polities	Data on 72 Maya Polities. Duration, System Size and Stability Data
Ruler Autonomy Data	E. Kiser, K.A.Drass & W. Brustein	1400-1700	Spain, England, France, Sweden	Data on ruler resource autonomy for these four powers. Includes list of all wars for all four states.
French Rural Revolt	J.Markoff	1789	France	Detailed data on the context of rural disturbances in France in 1789. Includes 18 variables.
Long Wave Dates	J. Goldstein	1495-1975	Great Powers	Dating scheme for Long Waves.
HERO(Dupuy Initiative) Data	Dupuy & Dupuy	1600-1982	Battles	Dataset on Battle determinants and results for 3 centuries.
Leading Sector Data	R. Reuveny & W. R. Thompson	1801-1992	US	Data on leading sector industries for the US
Global Power List	W.Kim	1648-1815	Global Powers	Data on internal and external balancing. Type of wars.Based on Levy, Modelski Datasets

The information in Table 1 indicates a diverse but uneven coverage of the pre-1816 period. Datasets with great temporal range, like those on Great Powers, tend to have few factors present. More focused datasets, like Markoff's on France in 1789, the Karaman and Pamuk dataset, or the Kiser *et.al.* Ruler Autonomy data, have a wealth of information but few cases. There are happy mediums though. The Kokkonen and Sundell data comes to mind. Some of this data has been explicitly built to work as extensions of extant post-1816 datasets. The Gibler and Sobek datasets fall into this category. The work of Cioffi-Revilla opens up antiquity to the researcher.

Despite this the various datasets remain distinct and combining them to a larger picture of the past would be a formidable undertaking. In Figure I, I try to visualize the data availability by historical period using the information from Table 1. It looks at the number of datasets that cover periods per polity types. Polities are divided into Great Polities (Great Powers, Major Powers, Global Powers) and Other Polities (all other types of polities). It should be noted that periods are not divided equally. The goal is more visualization than exactness.

Figure I. Visualizing the Islands in the Sea of the Past



The different dynamics of data availability for the two types of polities are evident. Almost all information on Great Polities comes from the post-1300 period, essentially indicating the monopoly of the Levy Great Power War data. On the other hand we can see two peaks of information for Other Polities. This is the period roughly between 3000 BCE and 0 CE, and then the period between 1500 and 1815. Interestingly enough there is less information on minor powers in the 1715-1816 period, compared to the pre-1700 period. This gap indicates that perhaps there is too much focus on Great Powers in the last century before 1816.

Is it worth exploring these islands of data? Scholars are always assailed by a demand for relevancy, a demand inimical to exploring the past. For those of us who use quantitative methods the trouble is intensified, as the data sees large gaps between the post-1816 and pre-1816 period, and within the pre-1816 period. The answer to this is two-fold. First, as political scientists or scholars of international relations we also have a mission to explain the evolution of human political activity. The past is part and parcel of this process.[15]

Second, the study of the past can help dent the eurocentrism of many contemporary and near-contemporary studies. Some of the data in Table 1 explore the international relations of pre-European America and Asia. Comparisons between these international systems and the European and then global interstate system can enrichen our narratives of evolution, and problematize our uncritical acceptance of certain facts. The 1994 exploration of the Iroquois Confederacy by Crawford is an example of this.[16] Third, the past can be used for comparative studies with the present in order to evaluate the analytical worth of theories. For example, Sobek's work on Republicanism has implications for the democratic peace comes to mind.[17] To put it simply, the data is there, it is up to the researcher to come up with a useful design using it.

We now move to describing the use of the data, beginning with independent variable use. Figure II presents the relative usage of the 10 variables that were used more than 3 times in comparison to each

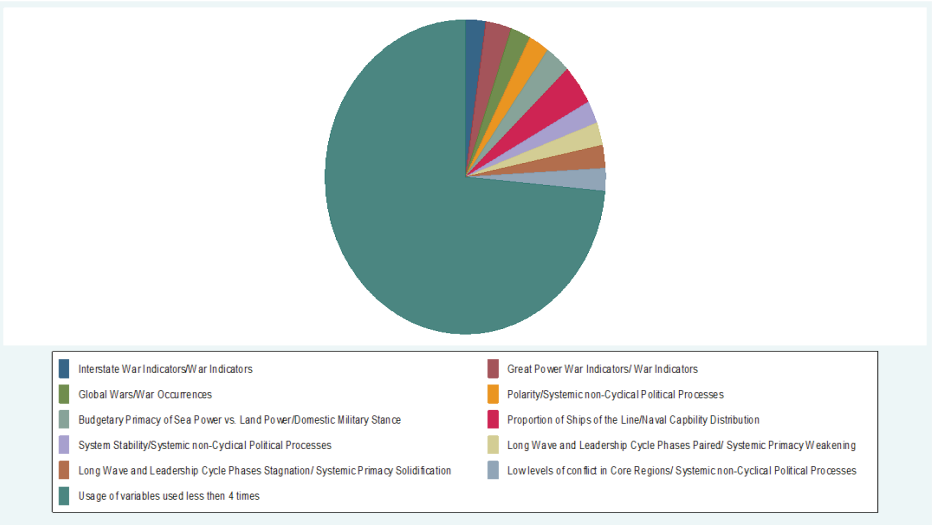
15 The best example of this is A. Kokkonen and A. Sundell, "Delivering Stability-Primogeniture and Autocratic Survival in European Monarchies 1000–1800", *American Political Science Review,* Vol.108, No.2, 2014.

16 N. C. Crawford, "A Security Regime among Democracies: Cooperation among Iroquois Nations", *International Organization,* Vol.48, No.3, 1994, p.345-385.

17 See D. Sobek, "Regime Type, Preferences, and War in Renaissance Italy", *Journal of Conflict Resolution,* Vol.47, No.2, 2003; and D. Sobek, "Machiavelli's Legacy: Domestic Politics and International Conflict", *International Studies Quarterly*, Vol.49, No.2, 2005.

other, and to the rest of the variables (the mean and median use is 2)[18]. The most frequently used variable is variations of the naval sea power data, created by Thompson and Modelski.[19] The characteristics of great power war (severity, frequency, etc) and indicators of the domestic balance between naval and land capability follow suit. Last are the variables associated with the Long Cycle research program and polarity. In general the most frequently used variables tend to be variables with a "realist" pedigree, associated with the distribution of conflict or material capabilities in the international system.

Figure II. Distribution of Independent Variable Usages in the Data



When it comes to the effect of the independent variables, of the 175 independent variable usages in the data, 24% exhibited a fostering relationship with the dependent variables/concepts explained. An inhibiting relationship was exhibited by 13% of the variables. Another 25% exhibited no relationship, while 15% had research designs that could not be used to evaluate relationships. Finally, 20% of the usages exhibited changing relationships for the variables. Of those, 55% changed by the temporal period (i.e. one result for the 17th century and another for the 18th century), while the rest saw change by cases (i.e. one result for great powers in the 18th century, and another for minor powers). It is interesting to note that unlike manuscripts with more contemporary temporal ranges, null results are more likely to get published when they result from research using a pre-1816 temporal range.

When looking at dependent variable usage, the average usage was 4 times (median 3). Of 41 dependent variables, 15 were used more than 4 times. Figure III presents the relative usage of dependent variables.[20] The dependent variables most often used are those connected to the dynamics of war. This focus on war dynamics is further supported by the data about whether a manuscript was trying to explain war dynamics. Of the 53 manuscripts, 33 focused on war dynamics (roughly 60%). Other popular dependent variables had to do with either the distribution of material capabilities in the system or with the evolution of the interstate system.

18 For the data tabulated see the online appendix.

19 See G. Modelski and W.Thompson, "Long Cycles and Global War", Manus Midlarsky (Ed.), *Handbook of War Studies*, Ann Arbor, University of Michigan Press, 1989, p.23-54.

20 For the data tabulated see the online appendix.

Figure III. Distribution of Dependent Variable Usages in the Data

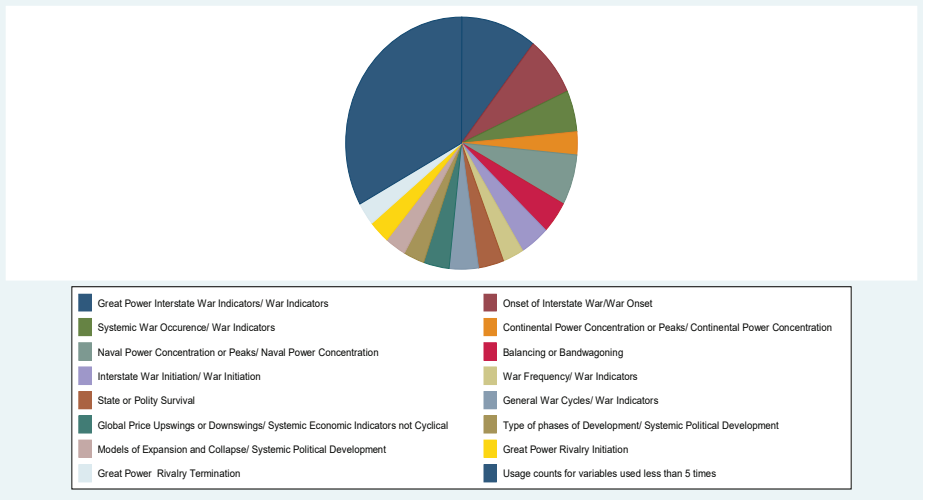
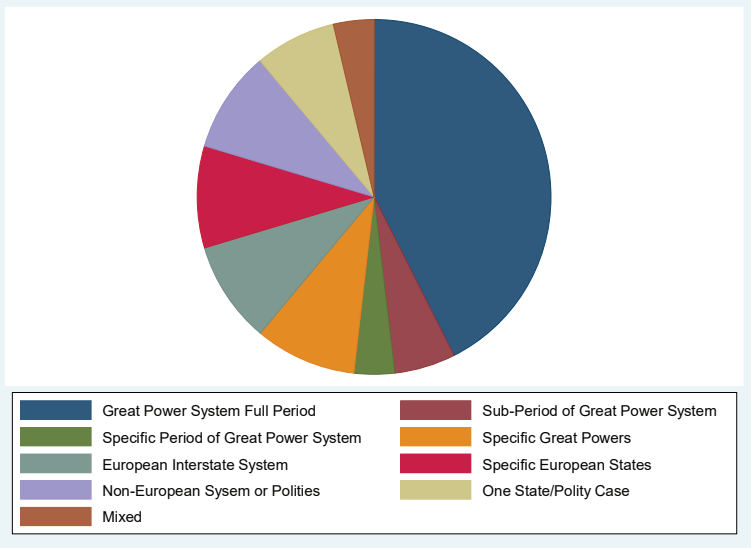


Figure IV provides information on the cases used in the various manuscripts. The Great Powers, as defined by Jack S. Levy, are used in 60% of the manuscripts.[21] The majority of usage concern the full period of membership in the Great Power System (1495 to the present). Manuscripts focusing on the European interstate system (including the pre-1816 iterations) make up about 20% of the articles.

Figure IV also presents the fact that 10% of the articles look at non-European systems or polities. Whether this is an indicator of the strong eurocentrism that the study of contemporary international relations is accused of or an exception to that trend is an interesting question for future study. What is clear is a data-availability driven bias towards Great Powers in pre-1816 studies.

Figure IV. Cases used

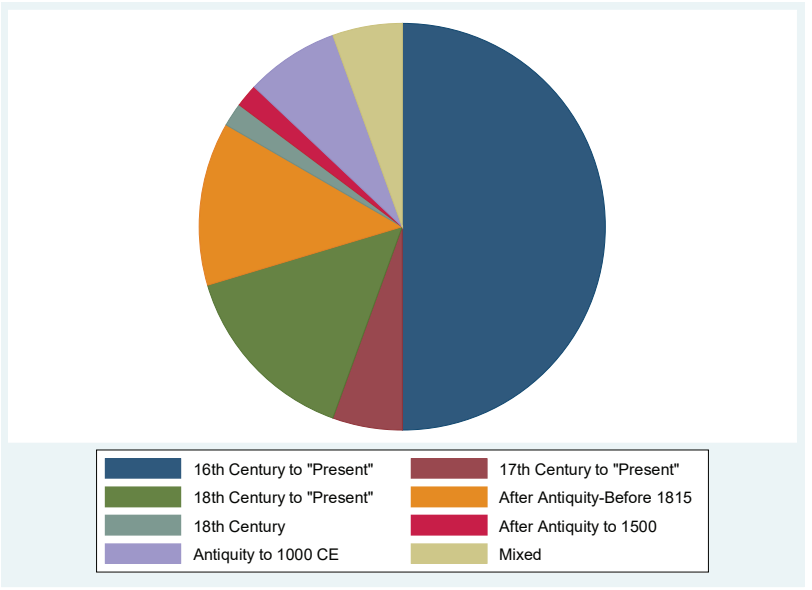


21 See J.S. Levy, *War in the Modern Great Power System: 1495-1975*, Lexington, University Press of Kentucky, 1983.

When it comes to temporal domain used, Figure V shows the distribution. About 50% of the articles have as a temporal domain the period from roughly 1495 to the "present," were present is the date end point of the dataset at the time the article was written. Considering the overwhelming use of great powers as cases this is not a surprising finding. It shows the dominance of the Levy 1495-present Great Power War dataset in analyses that chose to expand their temporal space into the pre-1816 period. It also shows that most analyses tend to focus on the long term evolution of the great power system across its 500 year history.

Despite this long-term perspective of the majority of manuscripts, around 23% of the manuscripts focus exclusively on the past before 1816. Indeed 7% focus exclusively on the period before 1000 CE. This is an encouraging statistic as it shows an interest from scholars to also study the history of international relations. It should be noted that the majority of studies of non-European systems and polities fall in this category. Such studies not only illuminate the past, but also help put the present in comparative perspective.

Figure V. Temporal Domain used



We now have a picture of the data used in articles focusing on the pre-1816 period. In the next section I explore what the data can tell about how different the pre and post 1816 period is in general, and specifically in comparison with what we know about the correlates of war in the post-1816 period.

Inferential Analysis-The Difference Argument

Some reasons to expect that there are differences between pre and post 1816 international relations dynamics were presented above. Whether this is the case and the magnitude of those differences is something one can begin assessing using the data from this REA. To start, I establish how often the analyses that produced the data resulted in indicators of difference or similarity. I then compared the specific findings on conflict dynamics with what we know about war from post-1816 studies.

To explore these dynamics I begin by coding for every independent variable whether the author(s) using it found evidence of different dynamics between the pre-1816 period and post-1816 period. Some articles had a temporal range that covered parts of both periods, and the results centered on the question of difference. In other articles the authors explicitly stated that their findings differed from previous findings from post-1816 research. In total, 141 of 175 independent variable usages were relevant to this question. Of those 43 (30%) found indicators of difference while 98 (70%) did not. At the article level of analysis 19 of 53 (35%) articles noted differences between the pre-1816 results and post-1816 results.

The majority of authors noted that their findings did not indicate a difference between the pre-1816 and post-1816 period. Only a third of the articles and variable usages resulted in findings of difference between periods. The great changes brought about by the Industrial Revolution, or ideational transformation, do not seem to have altered the dynamics of international politics to a degree that would make findings from the pre-change period irrelevant for the post-change period. Perhaps this picture changes when we focus on only those papers that try to explain conflict dynamics.

In Table 2 the results of bivariate cross-tabulation between whether an article was explaining conflict dynamics and whether there were indicators of difference are presented. They do indicate that most of the difference results were driven by articles conducting evaluations of conflict dynamics.

Table 2. Cross Tabulation of Difference Indicators with Type of Article, Ind. Variable Usage

Type of Article	**Difference found**	**No Difference found**	
Explores Conflict Dynamics	31(72%)	46(47%)	77(100%)
Does not Explore Conflict Dynamics	12(28%)	52(53%)	64(100%)
	43(100%)	98(100%)	141
Pearson chi2(1) = 7.6290 Pr = 0.006			

Of 43 independent variable usages that exhibited differences between the post and pre 1816 periods, 31 (72%) were found in articles that explained conflict dynamics. This is a statistically significant association. It should be noted that more than half (46 of 77) of the independent variable usages that were from articles exploring conflict dynamics did not show a difference. This means that while in general most variable usages did not indicate a difference, if a variable usage does indicate a difference it is more likely to be from a paper focusing on conflict dynamics.

There seems to be something different in conflict dynamics before and after 1816, even though this difference does not extend to broader political questions. To ascribe this to the Industrial Revolution would be fallacious as both conflict and political dynamics were affected by it. It could be that what changed is the regime context around the use of force.[22] Despite that, the findings of this REA cast some doubt on the thesis of difference. At least where political dynamics are concerned, the past is as relevant as the present. In the next part of this manuscript I delve deeper into conflict dynamics.

22 Goertz *et.al., The Puzzle of Peace* focus on territorial norms, I focus on the advent of interstate managerial coordination. See Travlos, *From Warmongers to Peacebuilders.*

Inferential Analysis-Conflict Dynamics

A recent review of quantitative findings on conflict dynamics found that a series of factors are associated with conflict onset in the post-1816 period.[23] Territorial issues, domestic political instability, rivalry, certain types of alliances, and the lack of military preponderance, are among the most important conflict fostering factors.

As found in the previous section, the articles that were most likely to find differences between the pre and post 1816 periods are those focusing on conflict dynamics. When we break down those studies by detailed independent and dependent variables, and compare them to what factors previous reviews have noted as fostering conflict in the post-1816 period some interesting patterns emerge.[24] Most of the variables used in studies tackling conflict dynamics that cover the pre-1816 period are extracted from three general themes: economics, material capabilities, and domestic political stability. In comparison to the post-1816 period crisis characteristics, ideological variables, territorial proximity variables, and issues of conflict are absent.

Extremely important is the concept of cycles, which does not hold the same power for post-1816 research. The tendency is for pre-1816 conflict studies to be very "realist" in their choice of variables. The lack of ideational variables is telling, as it cannot be explained by the lack of data. The lack of geographical variables might be driven by the dominance of great power/global power studies as these are the very states that can defy distance to wage war.

The main areas where studies find difference are the impact of alliances on war onset, the applicability of general models of war dynamics to different periods, and the relationship between economic cycles and warfare. However even within these areas of difference, in only five articles is there a clear case of difference between the pre and post 1816 periods. In all others differences and similarities are not in a linear temporal line. For example studies might find the 17th and 20th centuries similar but different to the similar 18th and 19th centuries. Of the five, in only one is there are clear break around 1816. In the other four the breaks are much earlier (1800), or much later (1939, 1960, 1914).[25] Thus the empirical reality of difference is most often not a clear gap at some point in the 19th century.

From the point of view of transformation due to the industrial revolution or the global expansion of capitalism, market volatility might explain the lack of a clear transformation point. From the point of view of the ideational argument, the fact that the impact of alliances on war onset is one the few variables experiencing differences is encouraging. This is because one of the main arguments of the ideational transformation was a change in the role of alliances in conflict dynamics. The lack of an 1816 transformation point might be explainable by the waning and waxing of managerial coordination in the 1816-2016 period. This would require further study to establish. In the end though, the indicators are that any changes in the last 500 years of history are not so transformative as to negate the similarities between the pre-1816 and post-1816 periods.

What are the specific stories these variables tell us? To explore this I use the collapsed variable categories in cross-tabulations with the *relationship found* variable.[26] The sample has an *n* of 89. Table 3 has all of the tabulation results. Three categories were only used once each and, thus are excluded due to insufficient data.[27]

23 For overviews see Vasquez (ed.), *What do we know about War?*; and D.S. Geller and J. D. Singer *Nations at War: A Scientific Study of International Conflict*, New York, Cambridge University Press, 1998.

24 A table with this breakdown can be found in the online appendix.

25 To explore specific cases, readers are encouraged to use the article narratives in the online appendix.

26 There are not enough degrees of freedom for regression.

27 For simplicity I present the reduced table here. This only includes full information for those relationships that were

The findings in Table 3 essentially tell us which patterns of association between independent variable categories and potential relationships, which were found in the literature to indicate difference between the pre and post 1816 periods, are likely to be due to random chance. At an *alpha* of 0.90 only two associations are not likely to be due to chance. These are the one between *war indicators* (which includes variables like severity, frequency, magnitude, and intensity) and war dynamics, and the one between *systemic primacy solidification* (which includes variables like primacy, hegemony, etc.) and war dynamics.

Table 3. Patterns of Conflict Dynamics from the data

Independent Variable Category(* stat. sign)	**Fostering Relationship Found**	**Inhibiting Relationship Found**	**No Relationship**	**Changing**	**Total**
Statistically Significant Variables					
1) War Indicators*					
Present	0 (0%)	4 (24%)	1 (4%)	2(10%)	7
Absent	28 (100%)	13(76%)	21 (96%)	19(90%)	81
Total	28	17	22	21	88
Pearson chi2(4) = 17.8223 Pr = 0.001					
2)Systemic Primacy Solidification*					
Present	0(0%)	4(24%)	0(0%)	2(10%)	6
Absent	28(100%)	13(76%)	22(100%)	19(90%)	82
Total	28	17	22	21	88
Pearson chi2(4) = 11.5659 Pr = 0.021					

Variables that failed to exhibit statistically significant behavior			
Variable	**Statistical Significance**	**Variable**	**Statistical Significance**
3) Land Capability Distribution Static	Pearson chi2(4) = 3.9394 Pr = 0.414	4) Land Capability Distribution Dynamic	Pearson chi2(4) = 4.2750 Pr = 0.370
5) Naval Capability Distribution	Pearson chi2(4) = 2.6914 Pr = 0.611	6) Systemic non-Cyclical Political Processes	Pearson chi2(4) = 2.6957 Pr = 0.610
7)Systemic Primacy Weakening	Pearson chi2(4) = 5.0251 Pr = 0.285	8)Systemic Long Term Processes	Pearson chi2(4) = 0.1826 Pr = 0.996
9)External Balancing Factors Static	Pearson chi2(4) = 1.7476 Pr = 0.782	10)External Balancing Factors Dynamics	Pearson chi2(4) = 6.2309 Pr = 0.183
11)Symmetrical Strong Alliances	Pearson chi2(4) = 4.4573 Pr = 0.348	12) Symmetrical and Asymmetrical Weak Alliances	Pearson chi2(4) = 4.4573 Pr = 0.348
13)Domestic factors favoring state stability	Pearson chi2(4) = 0.8159 Pr = 0.936	14)Domestic Factors Inhibiting State Foreign Policy Freedom	Pearson chi2(4) = 1.3083 Pr = 0.860
15)Domestic Factors favoring state foreign policy freedom	Pearson chi2(4) = 2.7433 Pr = 0.602	16)Domestic Factors that inhibit state foreign policy freedom	Pearson chi2(4) = 1.5588 Pr = 0.816
17)Domestic Military Stance	Pearson chi2(4) = 2.7433 Pr = 0.602	18)Dyadic Peace Fostering Factors	Pearson chi2(4) = 6.2176 Pr = 0.183

statistically significant. For detailed version see the online appendix.

The findings in Table 3 also indicate a difference between what studies focused on the post-1816 period found in comparison to studies looking at the pre-1816 period. In the post-1816 period many important findings concern dyadic capability distributions and domestic factors. In Table 3 all of the relationships found between conflict dynamics and variables belonging to categories associated with those levels of analysis may be due to random chance. This is partly because the dyadic level of analysis is seldom used in these studies, and partly because data for these factors might not show large variation in the periods before 1816. This is especially the case with factors that were slow to change in the pre-industrial era, like material capabilities.

When it comes to the statistically significant *war indicators*, the most frequent relationship was one of inhibition of conflict dynamics, and the second most frequent one of change. Change was either due to temporal period or due to different types of independent variables (global vs. interstate wars for example). Specific examples of difference are that while there is continuous decline in the frequency of great power war, there seems to be a definite difference in frequency between the pre-1735 and post-1735 international system, with 75% of great power wars taking place before 1735.[28] Furthermore, the intensity and severity of war had a different effect on economic price swings before 1815 and after 1815, with some studies moving this difference to 1914, and others back to 1750.[29] The inhibiting effect of characteristics of previous wars on conflict occurrence is not unknown in the post-1816 period. The idea that the characteristics of a war might make the next war less likely is part of the war-weariness argument.[30] But the relative increased rarity of war in the post-1816 period compared to the pre-1816 period has relegated this factor into a tertiary role in explaining conflict.

The *solidification of primacy* in the system is generally associated with the inhibition of conflict dynamics, and on a secondary level varies by the cases analyzed (i.e. interstate system vs. ancient China). The finding of an inhibitory relationship between conflict and the rise of hegemons and primarchs in the system is a dynamic noted in post-1816 research as well. Specific examples of the difference in the effect of primacy are that the effect of hegemon survival and war initiation for general war cycles only applies to the European system, and not to older non-European systems.[31] The character of hegemony, whether economic of the Wallerstein type, or military has a varied effect on rate of decolonization in the post-1960 period compared with the period before.[32]Finally, if the stagnation phase of both the Long Wave and Leadership Wave fall at the same time, the effect is different before and after 1816.[33]

These specific statistically significant differences are neither consistent enough from a temporal point of view, nor frequent enough to explain in general the differences found between the period before and after 1816. Instead, the only conclusion that I can come to based on this set of data is that they are probably driven by the differences in conflict frequency between the two periods. I would argue that this is not a difference significant enough to preclude the relevancy of findings in

28 See J. S. Levy, "Historical Trends in Great Power War, 1495-1975", *International Studies Quarterly*, Vol.26, No.2, 1982.

29 1815 is the key date for N. Beck, "The Illusion of Cycles in International Relations", *International Studies Quarterly,* Vol.35, No.4, 1991, p. 455-476. It is also for L.W. Sayrs, "The Long Cycle in International Relations: A Markov Specification", *International Studies Quarterly*, Vol.37, No.2, 1993. Goldstein instead points to 1914 as the key date in "Kondratieff Waves as War Cycles", *International Studies Quarterly,* Vol.29, No.4, 1985, but to 1750 in "Long Waves in War, Production, Prices, and Wages New Empirical Evidence", *Journal of Conflict Resolution,* Vol.31, No.4, 1987.

30 For a version of that argument see J. Pickering, "War-weariness and Cumulative Effects: Victors, Vanquished, and Subsequent Interstate Intervention", *Journal of Peace Research*, Vol.39, No.3, 2002.

31 See M. Melko, "Cycles of General War in World History", *International Interactions,* Vol.25, No.3, 1999.

32 See D. Strang, "Global Patterns of Decolonization, 1500–1987", *International Studies Quarterly,* Vol.35, No.4, 1991.

33 See B. M. Pollins and K. P. Murrin, "Where Hobbes meets Hobson: Core Conflict and Colonialism, 1495–1985", *International Studies Quarterly,* Vol.43, No.3, 1999.

one period for the other. The decline of conflict over the long historical period we are discussing has been attributed to long social evolutionary factors.[34] While a key transformation date may be 1816, the dynamics that led to that transformation had been active for at least a century before.[35] This is a picture of continuity, not discontinuity.

Conclusion

The quantitative study of international relations tends to be focused in the post-1816 period. Most research effort is put into mapping the present as it is slowly revealed by the passage of time. However, there has been research targeted at periods before 1816. In this manuscript I endeavored to provide a snapshot of this research in order to make it familiar to a newer generation of scholars. I collected data from three journals (*International Interaction, Journal of Conflict Resolution, and International Studies Quarterly*) on published articles with temporal ranges that include the pre-1816 period. I then used this data to provide some descriptive information on these studies, including information on datasets.

The findings of the description indicated that there is a considerable body of data that covers large swathes of pre-1816 history. It also showed that the studies tended to be dominated by specific macro-historical projects, even if some of the most exciting and detailed data referred to specific regions and periods. It was also found that in general, the studies did not note a difference between the pre and post-1816 periods. Consequently they cast into doubt arguments that the past is too different from the present for it to be a useful topic of study. The only difference seemed to be for studies that focus on explaining conflict dynamics. More expanded evaluations of those studies indicated that the difference found was probably due to the higher frequency of conflict pre-1816, rather than any other substantive reasons.

From the above findings I draw the following conclusions: First, the study of the past, and, indeed that far past, is a fertile academic endeavor for those interested in understanding the future and present of intentional relations. Second, intelligent research design can take advantage of the existing pre-1816 datasets to conduct evaluations that include both the pre-1816 and post-1816 period. That said there are gaps in the coverage, especially on minor powers in the 1615-1816 periods. We can use the existing datasets as starting points for expansion of coverage. The author is engaged in such a project for the 1715-1815 period. Finally we should temper our expectations of how much international relations can be transformed. What might seem radical in a century long temporal domain may be a slight variation in a millennium long temporal domain. This is not to say that changes do not happen, but our outlay in the sea of fog may render them more mundane, then what they seemed at first.

34 See J. S. Levy and W. R. Thompson, *The Arc of War: Origins, Escalation, and Transformation*, London, University of Chicago Press, 2011.

35 This is the argument of P. W. Schroeder, *The Transformation of European Politics, 1763-1848*, New York, Oxford University Press, 1996; and T. K. Rabb, *The Struggle for Stability in Early Modern Europe*, London, Oxford University Press, 1975.

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