

# FORMAL ALLIANCES, 1815—1939

## *A Quantitative Description*

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### 1. *Introduction*

Although there are many types of relationship and interaction between and among nations, very few of them leave the sort of 'trace' which makes them vulnerable to systematic observation. To 'get at' indicators of interdependence, interpenetration, hostility, cooperation, threats, or political distance phenomena, for example, is a costly and time-consuming enterprise whose results might turn out to be either methodologically unreliable or theoretically uninteresting. But one type of international relationship which leaves a relatively reliable trace and which is full of theoretical implications is the formal alliance. It is, therefore, surprising that we have seldom gone beyond the anecdotal treatment of a very few such relationships, or the intuitive generalization about some larger, but indefinite, number of them.<sup>1</sup>

Aware of the manageability of the problem and interested in the theoretical possibilities, we have undertaken — as part of a larger study — to provide a quantitative description of written alliances between 1815 and 1939. In this paper we attempt to identify all known written alliances consummated between the Congress of Vienna and the outbreak of World War II between and among sovereign national states.<sup>2</sup> For each, we will identify the signatories, specify the effective dates, and classify the type of commitment undertaken. In addition, we will aggregate the results in such a fashion as to permit appraisal of their significance both to the international system and to the diplomatic history of the nations them-

selves. Finally, we will describe as completely as is possible and necessary the coding and classifying procedures, such that others might either replicate the data-making operation, or, at least, know explicitly wherein their understanding and our results differ.

### 2. *The basic sources of information*

Since our need was for a classified catalog of formal alliances that did not, to our knowledge, exist, the problem was to identify the sources from which such information could be compiled for the 125-year period under investigation. Basically, two types of sources are available. The preferable one, because there is more relevant information in a single volume, is the sort of compilation prepared by the League of Nations Secretariat, the United Nations in more recent times, and the foreign ministries of the major powers.<sup>3</sup> The other type is the historical monograph; it may be partly dependent on the above-mentioned compilations, but usually has had to turn to the more elusive and fugitive archival materials.

For the period which concerns us here, two sources of the first type gave us a fair start; one was the League of Nations' *Treaty Series* and the other was Great Britain's *British and Foreign State Papers* series. The former, of course, was of no use for the first 100 years which we covered, and the latter turned out, therefore, to be quite valuable. Since such listings and treaty texts are generally prepared and published shortly after the year or years to be covered, their one major failing is

the absence of secret treaties whose existence only comes to light years or decades later.<sup>4</sup> Though these are the major omissions, other treaties do occasionally fail of inclusion because — in the case of the League or the United Nations — they were not formally registered with the organization by their signatories, or — in the case of national catalogs — the document was either considered insignificant to the compiling nation or was accidentally overlooked by those gathering such texts. Despite such omissions, however, a large proportion of the texts of the treaties included in our study were found in the British series and in the League volumes. The balance of the texts were located either in the compilations of other national governments or in the monographs and other secondary sources which we will describe in a moment.

The other major shortcoming, peculiar to the nature of their task, was the absence of regular information as to the termination date of any given inter-nation agreement: the time at which it was either formally abrogated or effectively negated or superseded. While dates of formal termination or abrogation were often found in subsequent volumes of governmental or international collections, *informal* but equally effective terminations were not listed. For example, the German-Polish neutrality pact of 1934 must be considered as void following the German attack on its treaty partner in 1939, and the Italian-Albanian defense pact of 1927 cannot be thought of as effective beyond the Italian invasion of 1939. Or, to take a more ambiguous case, only a close scrutiny of the specialized monographs would have revealed that the Root-Takahira agreement of 1908 had been effectively nullified within a year, as America's Far Eastern policy took a much more consciously aggressive form.

Turning, then, to these crucial secondary sources, it may be said that we subjected them to an informal sort of content

analysis. That is, we had first to decide on a sampling among them which assured that we had, for any given spatio-temporal setting, a representation of all relevant points of view; whether the bias be generated by nationality or theoretical predilection, it had to be considered. But as important as representativeness might be, our overriding concern had to be with accuracy and reliability. Now the social scientist might well argue that no objective criteria for such screening exist, and in the strict operational sense the charge is correct. But whatever we may think of the historian's craft, it values accuracy. A study may omit information whose absence the theorist deplures, and it may often fail to provide full comparative information, but whatever 'facts' *are* included have a very high likelihood of being accurate. The sociology of the discipline, of course, sees to that; and where is the social scientist who would spurn data merely because their reliability rests on high inter-subjective agreement?<sup>5</sup> In sum, we are persuaded that almost all of the available and relevant sources (in English, French, German, Italian, or Spanish) have been (a) consulted, (b) screened carefully, and (c) interpreted correctly, as to the facts of a given case. Those upon which we relied most heavily are included in Appendix I, arranged according to the treaty with which they are concerned.

### 3. *Codifying the treaties*

As we intimated in the Introduction, there were four characteristics of all formal alliances in the 1815–1939 period which needed to be ascertained. First, were at least two of the alliance partners qualified, independent nation-members of the international system? Second, were the operative clauses of the treaty such as to identify it as a defense, neutrality, or entente commitment? Third, what were its effective dates? And fourth, how 'serious' was the commitment undertaken by the signa-

tories? Let us describe briefly the coding criteria and procedures which we used in ascertaining these alliance characteristics.

*Political status of signatories:* Inasmuch as these alliance data were gathered in order to test certain hypotheses regarding correlations with the occurrence of international war, and since no war was classified as international unless at least one combatant on each side was an independent nation-member of the international system, there was no theoretical purpose in identifying alliances that were not also inter-national. Though the procedure for identifying nations and their appearance in or disappearance from the system is outlined and justified elsewhere (Singer and Small, 1966a) we can summarize it here by noting that, to qualify as a nation, a political entity not only had to have all the traditional earmarks of nationhood, but had to satisfy two other requirements as well: (a) a population exceeding half a million and (b) *de facto* diplomatic recognition from the two nations that come closest to being the international community's legitimizers during the period under investigation: Britain and France. Actually, the procedures were slightly more complex for the post-1920 period and are reported more fully in the aforementioned paper, but they need not concern us here.

In Table 1, then, are shown all the political entities which meet our population and recognition criteria and hence qualify as members of the international system. Recognizing that until rather recent times, however, 'the' system may not have been sufficiently interdependent to be treated as a single collectivity, we divided the pre-1920 system into two parts: the central or European system and the peripheral system. This selection of World War I as a watershed, after which the interdependence of the system justifies elimination of our distinction, is plausible enough, but neither we nor others

have yet devised a valid and reliable index of interdependence, although work on one is under way.<sup>6</sup>

Table 1 shows, therefore, not only the date at which each nation qualified as a total system member and the date of disappearance from the list (if prior to World War II), but the date at which it met the somewhat more stringent requirements for membership in the *central* system as well. Note, too, the letter code indicating the event which led to qualification as a total system member: *a* — crossed population threshold; *b* — recognized by both legitimizers; and *c* — released from *de facto* dependence. If no letter code appears, the entity had already qualified by the 1815 or 1920 opening date.

Table 1. *Composition of total (1815-1939) and central (1815-1919) systems*

	Qualifies as Nation-Member of Total System	Loses Membership in Total System	Qualifies as Nation-Member of Central System
Afghanistan . . . . .	1920		
Albania . . . . .	1914 <sup>b</sup>	1939	1914
Argentina . . . . .	1841 <sup>b</sup>		
Australia . . . . .	1920		
Austria (-Hungary) . .	1815	1938	1815
Baden . . . . .	1815	1870	
Bavaria . . . . .	1815	1870	
Belgium . . . . .	1830 <sup>b</sup>		1830
Bolivia . . . . .	1848 <sup>b</sup>		
Brazil . . . . .	1826 <sup>b</sup>		
Bulgaria . . . . .	1908 <sup>b</sup>		1908
Canada . . . . .	1920		
Chile . . . . .	1839 <sup>b</sup>		
China . . . . .	1860 <sup>b</sup>		1895
Colombia . . . . .	1831 <sup>b</sup>		
Costa Rica . . . . .	1920		
Cuba . . . . .	1934 <sup>c</sup>		
Czechoslovakia . . . .	1919 <sup>b</sup>		1919
Denmark . . . . .	1815		1815
Dominican Republic .	1887 <sup>a</sup>		
Ecuador . . . . .	1854 <sup>b</sup>		
Egypt . . . . .	1936 <sup>c</sup>		
England . . . . .	1815		1815
Estonia . . . . .	1920		
Ethiopia . . . . .	1898 <sup>b</sup>	1936	

	Qualifies as Nation-Member of Total System	Loses Membership in Total System	Qualifies as Nation-Member of Central System
Finland .....	1919 <sup>b</sup>		1918
France.....	1815		1815
Germany (Prussia) ..	1815		1815
Greece.....	1828 <sup>b</sup>		1828
Guatemala .....	1849 <sup>b</sup>		
Haiti .....	1859 <sup>b</sup>		
Hanover .....	1838 <sup>a</sup>	1866	
Hesse Electoral .....	1815	1866	
Hesse Grand Ducal .	1815	1867	
Holland .....	1815		1815
Honduras .....	1899 <sup>a</sup>		
Hungary .....	1920		
Iraq .....	1932 <sup>c</sup>		
Ireland .....	1921 <sup>c</sup>		
Italy (Sardinia) ....	1815		1815
Japan .....	1860 <sup>b</sup>		1895
Korea .....	1888 <sup>b</sup>	1905	
Latvia .....	1920		
Liberia .....	1920		
Lithuania .....	1920		
Luxembourg .....	1918 <sup>b</sup>		
Mecklenberg-Schwerin	1843 <sup>a</sup>	1867	
Mexico .....	1831 <sup>b</sup>		
Modena .....	1847 <sup>a</sup>	1860	
Mongolia .....	1920		
Morocco .....	1847 <sup>b</sup>	1911	
Nepal .....	1920		
New Zealand .....	1920		
Nicaragua.....	1900 <sup>a</sup>		
Norway .....	1905 <sup>b</sup>		1905
Panama .....	1920		
Papal States .....	1815	1860	
Paraguay .....	1896 <sup>a</sup>		
Parma .....	1851 <sup>a</sup>	1860	
Persia (Iran) .....	1855 <sup>b</sup>		
Peru .....	1838 <sup>b</sup>		
Poland .....	1919 <sup>b</sup>		1919
Portugal .....	1815		1815
Rumania .....	1878 <sup>b</sup>		1878
Russia .....	1815		1815
El Salvador .....	1875 <sup>a</sup>		
Saudi Arabia .....	1927 <sup>b</sup>		
Saxony .....	1815	1867	
South Africa.....	1920		
Spain.....	1815		1815
Sweden .....	1815		1815
Switzerland .....	1815		1815
Thailand (Siam) ...	1887 <sup>b</sup>		
Two Sicilies .....	1815	1860	
Turkey .....	1815		1815

	Qualifies as Nation-Member of Total System	Loses Membership in Total System	Qualifies as Nation-Member of Central System
Tuscany .....	1815	1860	
United States .....	1815		1899
Uruguay .....	1882 <sup>a</sup>		
Venezuela.....	1841 <sup>b</sup>		
Württemberg .....	1815	1870	
Yemen .....	1934 <sup>b</sup>		
Yugoslavia (Serbia) .	1878		1878

## Qualification key:

*a* — crossed population threshold*b* — recognized by legitimizers*c* — released from de facto dependence

All others had qualified at, or prior to, the 1815 or 1920 dates.

The first requirement, then, was that at least two of the signatories to a treaty or pact which *might* be included had to be independent nations by our definition. This screening rule, of course, immediately eliminated hundreds of treaties which, while of interest to others, had no bearing on the theoretical needs of this study.

*Nature of the treaty commitment:* Since our concern is not with *all* treaties among independent nations, but only certain treaties of alliance, our next problem was to screen out those which did not fall within these confines. Our first requirement here was that the commitment be in the form of a written, formal agreement. Let it be clear at the outset, however, that we do not assume that all meaningful bonds between nations are expressed by, or codified in, written treaties; nor do we imply that the only — or even the most — significant coalition is the formal alliance.<sup>7</sup> We merely suggest that the formal treaty of alliance is an extremely common mode by which nations join together and divide in pursuing their self-defined interests, and that as such it is worth systematic

examination. It should also be recognized that each nation's commitment to its alliance partners is an individual case, with sincerity and meaningfulness a varying thing. But, as Section 5 clearly demonstrates, there is little evidence that alliance obligations are either undertaken casually or forgotten when the specified contingency arises.

Turning, then, to the nature of the obligation, we classified bilateral and multilateral treaties of alliance on the basis of their operative clauses (reinforced always by the historians' consensus) into three classes, depending upon the response required in certain specified contingencies. Labelled as defense pacts, neutrality or non-aggression pacts, and ententes, the general obligation criteria were as follows:

- I. Defense Pact: Intervene militarily on the side of any treaty partner that is attacked militarily.
- II. Neutrality and Non-Aggression Pact: Remain militarily neutral if any co-signatory is attacked. (The neutrality pact is usually more specific than the more sweeping non-aggression pact.)
- III. Entente: Consult and/or cooperate in a crisis, including armed attack.

Certain additional coding rules were followed. First, we did not classify the pact on the basis of events which *followed* its coming into force; even though the signatories may be said to have reinterpreted the text via verbal, diplomatic, or military behavior, the classification was strictly in terms of the original, formal treaty commitment. For example, even though the Anglo-French entente of 1904 had taken on the effect of a defense pact in 1914, it was treated only as the limited territorial understanding which it was during those ten years. Second, we did not permit overlapping membership to enlarge the alliance size; that is, if *C* were

allied with *A* and *B* in one pact and with *D* and *E* in another, *A*, *B*, *D*, and *E* were not classified as allies of another. Third, alliances which were made during war-time or within three months prior to war were not included; this coding rule might not be appropriate to all research inquiries, but, given our interest in the extent to which alliances predicted to war, it was the only reasonable one to use. The effect of this rule was to exclude alliances which were made when the probability of war had approached 'certainty', thus contaminating the assumed independence between the two observations which were to be correlated. Thus, a few such treaties as the Russian-French neutrality pact of 1859 and the Soviet-German Non-Aggression pact of 1939 were excluded.

Finally, a rather large class of treaties was excluded because they did not reflect, in any appreciable fashion, the coalitions and divisions in the system. Among these were (a) collective security agreements such as the League Covenant and the United Nations Charter; (b) charters and constitutions of such quasi-global international organizations as the Universal Postal Union, or the International Labor Organization; (c) treaties of guarantee to which all relevant powers registered their assent, such as the Belgian Neutrality Agreement of 1839, the Washington Conference Treaties of 1921-22, and the Locarno Pact of 1925; (d) agreements limited to general rules of behavior, such as the Kellogg-Briand Pact and the Geneva Conventions; and (e) unilateral guarantees, such as the United States commitment to the protection of the Isthmus of Panama in 1903.

*Effective dates of the alliance:* Having spelled out the procedures for identifying the participants and their commitments relevant to the treaties which interest us here, the next problem was that of pinning down the beginning and end of the period during which the defined nations were

under the defined obligations to their alliance partners. The effective date of inception, of course, poses few difficulties. In those very few cases where the text itself (or associated documents and annexes) does not specify when the agreement takes effect, the date of the formal signing is the one we use. Normally, the following sort of phrase is found: 'The present agreement will enter into force as soon as all the ratifications have been deposited.'

As to termination, however, the matter is more complicated. In many cases, of course, the text itself stipulates a termination date which may or may not be conditional. For example, article 6 of the Soviet-German Non-Aggression Pact of 1939 (which we did not include) provides, unprophetically, that 'the present treaty is concluded for a period of ten years, with the proviso that, in so far as one of the High Contracting Parties does not denounce it one year prior to the expiration of this period, the validity of this treaty shall automatically be extended for another five years'. Our rule, then, was to use the termination date specified in the agreement itself, unless: (a) formal abrogation occurred first; (b) the treaty was formally renewed or extended; (c) informal abrogation occurred via explicitly recognized violation of the commitments, or via the assumption of new and incompatible obligations by one or more signatories.

In all cases of ambiguity, we again fell back on the consensus among the historians with special expertise in the particular time-place setting. And in a few cases of disagreement, an alternative date with question mark is included in Table 2.

*The empirical results:* To this point, we have identified our basic data sources and outlined the procedures by which we selected and classified the alliance treaties and their signatories, the commitments they undertook, and the duration of those commitments. What sort of empirical

results flow from applying these coding rules to our basic information sources? In Table 2, these results are presented in chronological order; for the 82 nations which existed at any time during the 1815–1939 period, there were 112 formal agreements which met our criteria of alliance commitment. The reader will also note that a number of the members of pre-1920 alliances are marked by an asterisk. This indicates that the nation qualified by our criteria as a member of the total international system, but did not meet our requirements for membership in what we call the 'central system'.

Table 2. *Inter-nation alliances, 1815–1939, with commitment class and dates*

Members	Incept	Termin.	Class
Austria . . . . .	6/1815–1848, 1866		1
Baden* . . . . .	1850		
Bavaria*			
Hesse-Electoral*			
Hesse-Grand Ducal*			
Prussia . . . . .			
Saxony* . . . . .			
Württemberg* . . . . .			
Hanover* . . . . .	1838**		
Mecklenberg-Schwerin* . . . . .	1843**		
Austria . . . . .	11/1815	1823	1
England . . . . .			
Prussia . . . . .			
Russia . . . . .			
France . . . . .	11/1818		
England . . . . .	7/1827	1830	3
France . . . . .			
Russia . . . . .			
Russia . . . . .	7/1833	1840	1
Turkey . . . . .			
Austria . . . . .	10/1833–1848, 1854		3
Prussia . . . . .	1850		
Russia . . . . .			
England . . . . .	4/1834–1840, 1846		1
France . . . . .	1841		
Portugal . . . . .			
Spain . . . . .			
Austria . . . . .	7/1840	1840	1
England . . . . .			

Members	Incept.	Termin.	Class	Members	Incept.	Termin.	Class
Prussia .....				Austria .....	10/1883	1914	1
Russia .....				Germany .....			
Turkey .....				Rumania .....			
England .....	6/1844	1853	3	Italy .....	5/1888		
Russia .....		(1846?)		Austria .....	6/1881	1887	2
Austria .....	12/1847	1859	1	Germany .....			
Modena* .....				Russia .....			
Austria .....	1851**	1859	1	Austria .....	6/1881	1889	2
Parma* .....				Serbia .....	1889***	1895	1
France.....	1/1859	1859	1	Germany .....	6/1887	1890	2
Sardinia .....				Russia .....			
Modena* .....	?/1859	1860	1	Austria .....	2/1887	1895	3
Parma* .....				England .....		(1897?)	
Tuscany* .....				Austria .....	5/1887	1895	2
Ecuador* .....	1/1860	1861(?)	1	Italy .....			
Peru* .....				Spain.....			
England .....	10/1861	1862	3	France.....	8/1891	1894	3
France.....				Russia .....	1894***	1914	1
Spain.....				China .....	5/1896	1902(?)	1
Prussia .....	2/1863	1864	1	Russia .....			
Russia .....				Japan .....	6/1896	1903	3
Colombia* .....	1/1864	1865(?)	1	Russia .....			
Ecuador* .....				Austria .....	5/1897	1908	3
Baden* .....	8/1866	1870	1	Russia .....			
Prussia .....				England .....	10/1899	1914	1
Prussia .....	8/1866	1870	1	Portugal .....			
Württemberg* .....				France.....	12/1900	1902	3
Bavaria* .....	8/1866	1870	1	Italy .....	7/1902***	1914	2
Prussia .....				England .....	1/1902	1921	1
Bolivia*.....	2/1873	1883	1	Japan .....			
Peru* .....				England .....	4/1904	1914	3
Austria .....	10/1873	1878	3	France.....			
Germany .....				France.....	10/1904	1914	3
Russia .....				Spain.....			
Austria .....	1/1877	1878	2	England .....	5/1907	1914	3
Russia .....				Spain.....			
England .....	6/1878	1880	1	France.....	6/1907	1914	3
Turkey .....				Japan .....			
Austria .....	10/1879	1914	1	Japan .....	7/1907	1914	3
Germany .....				Russia .....			
Italy .....	5/1882						

Members	Incept.	Termin.	Class	Members	Incept.	Termin.	Class
England .....	8/1907	1914	3	Czechoslovakia ..	1/1924	1924	3
Russia .....				France.....	1925***	1939	1
Japan .....	10/1908	1909	3	Italy .....	1/1924	1927	2
U.S.A.....				Yugoslavia .....			
Italy .....	10/1909	1914	3	Czechoslovakia ..	7/1924	1930	3
Russia .....				Italy .....			
Bulgaria .....	3/1912	1913	1	Russia .....	12/1925	1939	2
Serbia .....				Turkey .....			
Bulgaria .....	5/1912	1913	1	Germany .....	4/1926	1936	2
Greece.....				Russia .....			
Greece.....	6/1913	1914	1	France.....	6/1926	1939	2
Serbia .....				Rumania .....			
Czechoslovakia ..	8/1920	1933		Afghanistan .....	8/1926	1939	2
Yugoslavia .....				Russia .....			
Czechoslovakia ..	4/1921	1933	1	Lithuania .....	9/1926	1939	2
Rumania .....				Russia .....			
Rumania .....	6/1921	1933	1	Italy .....	9/1926	1930	3
Yugoslavia .....				Rumania .....			
Czechoslovakia ..	2/1933	1939	1	Albania .....	11/1926	1927	3
Rumania .....				Italy .....	1927***	1939	1
Yugoslavia .....				France.....	1/1927	1939	2
Belgium .....	9/1920	1936	1	Yugoslavia .....			
France.....				Hungary .....	4/1927	1939	2
France.....	2/1921	1939	1	Italy .....			
Poland .....		(1934?)		Persia .....	10/1927	1939	2
Poland .....	3/1921	1939	1	Russia .....			
Rumania .....				Greece.....	3/1928	1934	2
Afghanistan .....	3/1921	1939	1	Rumania .....			
Turkey .....				Greece.....	10/1930	1934	2
Persia .....	4/1926	1937	2	Turkey .....			
Turkey .....				Rumania .....	10/1933	1934	2
Afghanistan .....	11/1927	1937	2	Turkey .....			
Persia .....				Turkey .....	11/1933	1934	2
Afghanistan .....	9/1937	1939	2	Yugoslavia .....			
Iraq .....				Greece.....	2/1934	1939	1
Persia .....				Rumania .....			
Turkey .....				Turkey .....			
Austria .....	12/1921	1927	2	Yugoslavia .....			
Czechoslovakia...				Italy .....	5/1928	1938	2
Estonia .....	11/1923	1939	1	Turkey .....			
Latvia .....							



Members	Incept.	Termin.	Class	Members	Incept.	Termin.	Class
Greece.....	2/1928	1938	2	Austria .....	3/1934	1938	3
Italy .....				Hungary .....			
				Italy .....			
Hungary .....	1/1929	1939	2	Estonia .....	8/1934	1939	3
Turkey .....				Latvia .....			
				Lithuania .....			
Bulgaria .....	3/1929	1938	2	France.....	4/1935	1938	3
Turkey .....				Italy .....			
				Czechoslovakia ..	5/1935	1939	1
Bulgaria .....	7/1938	1939	2	Russia .....			
Greece.....				Mongolia .....	3/1936	1939	1
Rumania .....				Russia .....			
Turkey .....				Egypt .....	10/1936	1939	1
Yugoslavia .....				England .....			
France.....	2/1930	1939	2	Germany .....	11/1936	1939	3
Turkey .....				Japan .....			
England .....	1932	1939	1	Italy .....	11/1937		
Iraq .....				Argentina .....	12/1936	1939	3
Finland .....	1/1932	1939	2	Bolivia.....			
Russia .....				Brazil .....			
Latvia .....	2/1932	1939	2	Chile .....			
Russia .....				Colombia .....			
Estonia .....	5/1932	1939	2	Costa Rica .....			
Russia .....				Cuba .....			
Poland .....	7/1932	1939	2	Dominican Republic .....			
Russia .....				Ecuador .....			
France.....	11/1932	1935	2	El Salvador .....			
Russia .....	1935***	1939	1	Guatemala .....			
England .....	6/1933	1936(?)	3	Haiti .....			
France.....				Honduras .....			
Germany .....				Mexico .....			
Italy .....				Nicaragua.....			
Italy .....	9/1933	1939	2	Panama .....			
Russia .....				Paraguay .....			
Argentina .....	10/1933	1939	2	Peru .....			
Brazil .....				U.S.A. ....			
Chile .....				Uruguay .....			
Mexico .....				Venezuela.....			
Paraguay .....				Italy .....	3/1937	1939	2
Uruguay .....				Yugoslavia .....			
Colombia .....	4/1934			Arabia.....	4/1937	1939	1
Panama .....	11/1936			Yemen .....			
Finland .....	2/1938			China .....	8/1937	1939	2
Germany .....	1/1934	1939	2	Russia .....			
Poland .....				France.....	12/1938	1939	3
				Germany .....			

Members	Incept.	Termin.	Class
Portugal .....	3/1939	1939	2
Spain.....			
Germany .....	5/1939	1939	1
Italy .....			
Denmark .....	5/1939	1939	2
Germany .....			
Estonia .....	6/1939	1939	2
Germany .....			
Germany .....	6/1939	1939	2
Latvia .....			

Note: As pointed out on page 000, alliances consummated during, or within three months prior to, a nation's involvement in war were not included. Hence the omission of the two World War periods.

1. Classes of alliance are 1-Defense Pact; 2-Neutrality and Non-Aggression Pact; 3-Entente.
2. Inception dates show month and year, but termination dates cannot be ascertained with the same precision; where no consensus exists for that date, an alternate year (?) is also shown.
3. Comma between dates indicates temporary break in the alliance.
4. One asterisk \* indicates that nation belongs to peripheral system only.
5. Two asterisks \*\* indicate that nation qualified for system membership *after* joining alliance.
6. Three asterisks \*\*\* indicate that the same nations negotiated a new alliance of another class, effective this date.
7. Brackets indicate that one or more bilateral alliances were merged in a new and larger grouping.

Turning now from the total listing of inter-nation alliances of the three types noted, let us look briefly at the distribution

of alliances by type, system, and signatory status. As to the latter category, reference is to the simple major-minor dichotomy agreed upon by almost all historians of the periods under review.<sup>8</sup> As Table 3 indicates, almost all alliances during our 125-year period were accounted for by the central system. Moreover, a large proportion of them was also accounted for by the major powers, especially as regards the entente, or class III alliance. That is, 30 of the 46 defense pacts in the total system, twenty-eight of the 41 neutrality or non-aggression pacts, and all of the ententes included at least one major power. And if, as in Table 4, we divide our results into nineteenth and twentieth century periods, the distributions are basically the same, but with the minor powers showing even less alliance activity in the earlier period.

4. Annual alliance aggregation

Although the data already presented should be of considerable value, they provide little help to the student of historical fluctuations and trends. Thus, in this section we provide data on a number of alliance aggregation variables, presented year by year, and under the total system rubric (Table 5) as well as under that of the central system alone (Table 6).

Two rather simple and straightforward measures of alliance aggregation are used for computing each year's index. On the left hand side of the two Tables are five columns showing the percentage of the system's nations which are in one or more alliances of a given class during that year:

Table 3. *Distribution of international alliances by system, class, and composition*

	Total System			Central System Only		
	I	II	III	I	II	III
Majors with Majors .....	10*	6	18*	11*	6	18*
Majors with Minors .....	23*	22	7*	16*	22	7*
Minors with Minors .....	17*	13	3*	12	13	3*
Total .....	46	41	25	37	41	25

(\* indicates that the number includes up to 3 alliances which were counted two or three times reflecting inclusion in more than one composition group.)

Table 4. *Distribution of alliances by century, system, class and composition*

	1815-1899						1900-1939						
	Total System			Central System			Total System			Central System			
	I	II	III	I	II	III	I	II	III	I	II	III	
Majors with Majors . . . .	7*	3	7*	7*	3	7*	3	3	3	10	3	3	10
Majors with Minors . . . .	15*	1	2*	9*	1	2*	8	21	6*	8	21	6*	
Minors with Minors . . . .	6*	0	0	0	0	0	12	13	3*	12	13	3*	
Total . . . . .	23	4	8	14	4	8	23	37	17	23	37	17	

(\* indicates that the number includes up to 3 alliances which were counted two or three times reflecting inclusion in more than one composition group.)

Table 5. *Annual alliance aggregation in total international system, 1815-1939*

Year	No. of Nations	No. of Maj. Powers	% in Any	% in Def.	% Majs. in Any	% Majs. in Def.	% Maj./Min.	All Any	All Def.	All Neut.	All Ent.	All Maj. Any	All Maj. Def.	All Maj. Neut.	All Maj. Ent.	All Maj./Min.
1815	23	5	43	43	80	80	40	144	144	0	0	120	120	0	0	240
1816	23	5	43	43	80	80	40	144	144	0	0	120	120	0	0	240
1817	23	5	43	43	80	80	40	144	144	0	0	120	120	0	0	240
1818	23	5	43	43	80	80	40	144	144	0	0	120	120	0	0	240
1819	23	5	48	48	100	100	40	161	161	0	0	200	200	0	0	240
1820	23	5	48	48	100	100	40	161	161	0	0	200	200	0	0	240
1821	23	5	48	48	100	100	40	161	161	0	0	200	200	0	0	240
1822	23	5	48	48	100	100	40	161	161	0	0	200	200	0	0	240
1823	23	5	48	48	100	100	40	161	161	0	0	200	200	0	0	240
1824	23	5	35	35	40	40	40	122	122	0	0	20	20	0	0	240
1825	23	5	35	35	40	40	40	122	122	0	0	20	20	0	0	240
1826	24	5	33	33	40	40	40	117	117	0	0	20	20	0	0	240
1827	25	5	45	33	100	40	40	124	112	0	12	80	20	0	60	240
1828	25	5	44	32	100	40	40	124	112	0	12	80	20	0	60	240
1829	25	5	44	32	100	40	40	124	112	0	12	80	20	0	60	240
1830	25	5	44	32	100	40	40	124	112	0	12	80	20	0	60	240
1831	28	5	29	29	40	40	40	100	100	0	0	20	20	0	0	240
1832	28	5	29	29	40	40	40	100	100	0	0	20	20	0	0	240
1833	28	5	36	36	60	40	60	111	103	0	8	60	20	0	40	260
1834	28	5	50	50	100	80	99	133	125	0	8	80	40	0	40	340
1835	28	5	50	50	100	80	99	133	125	0	8	80	40	0	40	340
1836	28	5	50	50	100	80	99	133	125	0	8	80	40	0	40	340
1837	28	5	50	50	100	80	99	133	125	0	8	80	40	0	40	340
1838	30	5	50	50	100	80	99	150	143	0	7	80	40	0	40	380
1839	31	5	48	48	100	80	99	145	139	0	6	80	40	0	40	380
1840	31	5	39	39	80	80	80	152	152	0	0	120	120	0	0	360
1841	33	5	43	40	100	80	80	133	127	0	6	80	40	0	40	360
1842	34	5	44	41	100	80	80	156	150	0	6	80	40	0	40	400
1843	35	5	43	40	100	80	80	151	145	0	6	80	40	0	40	400
1844	35	5	43	40	100	80	80	151	145	0	6	80	40	0	40	400
1845	35	5	43	40	100	80	80	151	145	0	6	80	40	0	40	400
1846	35	5	43	40	100	80	80	151	145	0	6	80	40	0	40	400
1847	36	5	33	30	60	40	40	133	127	0	6	60	20	0	40	340
1848	37	5	32	29	60	40	40	129	124	0	5	60	20	0	40	340
1849	38	5	3	3	0	0	20	3	3	0	0	0	0	0	0	20

Year	No. of Nations	No. of Maj. Powers	% in Any	% in Def.	% Majs. in Any	% Majs. in Def	% Maj./Min.	AIJ Any	AIJ Def.	AIJ Neut.	AIJ Ent.	AIJ Maj. Any	AIJ Maj. Def.	AIJ Maj. Neut.	AIJ Maj. Ent.	AIJ Maj./Min.
1850	38	5	32	29	60	40	40	126	121	0	5	60	20	0	40	340
1851	39	5	33	30	60	40	40	126	121	0	5	60	20	0	40	360
1852	39	5	33	30	60	40	40	126	121	0	5	60	20	0	40	360
1853	39	5	33	30	60	40	40	126	121	0	5	60	20	0	40	360
1854	40	5	33	30	60	40	40	123	118	0	5	60	20	0	40	360
1855	41	5	29	29	40	40	40	115	115	0	0	20	20	0	0	360
1856	41	5	29	29	40	40	40	115	115	0	0	20	20	0	0	360
1857	41	5	29	29	40	40	40	115	115	0	0	20	20	0	0	360
1858	41	5	29	29	40	40	40	115	115	0	0	20	20	0	0	360
1859	42	5	33	33	40	40	60	114	114	0	0	20	20	0	0	340
1860	44	6	34	34	33	33	40	109	109	0	0	17	17	0	0	267
1861	39	6	38	30	66	33	67	123	117	0	6	33	17	0	0	300
1862	39	6	33	25	66	33	67	121	115	0	6	33	17	0	0	300
1863	39	6	28	28	50	50	33	118	118	0	0	33	33	0	0	267
1864	39	6	33	33	50	50	33	121	121	0	0	33	33	0	0	267
1865	39	6	31	31	33	33	33	118	118	0	0	17	17	0	0	267
1866	39	6	26	26	33	33	33	116	116	0	0	17	17	0	0	267
1867	38	6	11	11	0	0	17	8	8	0	0	0	0	0	0	50
1868	34	6	12	12	0	0	17	9	9	0	0	0	0	0	0	50
1869	34	6	12	12	0	0	17	9	9	0	0	0	0	0	0	50
1870	34	6	12	12	0	0	17	9	9	0	0	0	0	0	0	50
1871	34	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1872	31	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1873	31	6	16	6	50	0	0	13	3	0	10	50	0	0	50	0
1874	31	6	16	6	50	0	0	13	3	0	10	50	0	0	50	0
1875	32	6	16	6	50	0	0	13	3	0	10	50	0	0	50	0
1876	32	6	16	6	50	0	0	13	3	0	10	50	0	0	50	0
1877	32	6	16	6	50	0	0	13	3	3	7	67	0	17	50	0
1878	34	6	21	12	50	0	17	15	6	3	6	67	0	17	50	17
1879	34	6	18	18	33	33	17	9	9	0	0	17	17	0	0	17
1880	34	6	18	18	33	33	17	9	9	0	0	17	17	0	0	17
1881	34	6	18	12	50	33	17	15	6	9	0	50	17	33	0	17
1882	35	6	20	14	67	50	17	20	11	9	0	100	50	50	0	17
1883	35	6	23	17	67	50	33	26	17	9	0	100	50	50	0	50
1884	35	6	23	17	67	50	33	23	14	9	0	100	50	50	0	50
1885	35	6	17	11	67	50	33	23	14	9	0	100	50	50	0	50
1886	35	6	17	11	67	50	33	23	14	9	0	100	50	50	0	50
1887	37	6	22	11	84	50	33	32	13	13	6	116	50	33	33	83
1888	38	6	21	10	84	50	50	32	16	10	6	100	50	17	33	100
1889	38	6	21	12	84	50	50	32	18	18	6	100	50	17	33	100
1890	38	6	21	12	84	50	50	32	18	8	6	100	50	17	33	100
1891	38	6	24	12	100	50	50	32	18	8	8	100	50	0	50	100
1892	38	6	24	12	100	50	50	32	18	6	8	100	50	0	50	100
1893	38	6	24	12	100	50	50	32	18	6	8	100	50	0	50	100
1894	38	6	24	18	100	83	50	32	20	6	6	100	67	0	33	100
1895	38	7	24	18	86	71	43	32	20	6	6	86	57	0	29	86
1896	39	7	21	18	71	71	57	24	22	0	2	71	57	0	14	57
1897	39	7	21	18	71	71	57	27	23	0	4	86	57	0	29	57
1898	40	7	21	18	71	71	57	25	19	0	6	86	57	0	29	57
1899	41	8	24	22	63	63	63	27	23	0	4	75	50	0	25	63

Year	No. of Nations	No. of Maj. Powers	% in Any	% in Def.	% Majs. in Any	% Majs. in Def	% Maj./Min.	AII Any	AII Def.	AII Neut.	AII Ent.	AII Maj. Any	AII Maj. Def.	AII Maj. Neut.	AII Maj. Ent.	AII Maj./Min.
1900	42	8	24	22	63	63	63	29	23	0	6	88	50	0	38	63
1901	42	8	24	22	63	63	63	29	23	0	6	88	50	0	38	63
1902	42	8	24	24	88	88	63	31	24	3	4	100	63	12	25	63
1903	42	8	24	24	88	88	50	26	20	3	3	88	63	12	12	50
1904	42	8	22	22	88	88	63	31	20	3	8	100	63	12	25	63
1905	43	8	23	21	88	88	63	30	20	2	8	100	63	12	25	63
1906	42	8	23	21	88	88	63	31	20	3	8	100	63	12	25	63
1907	42	8	23	21	88	88	63	40	20	3	17	138	63	12	63	75
1908	43	8	26	21	100	88	63	42	20	3	19	150	63	12	75	75
1909	43	8	26	21	100	88	63	42	20	3	19	150	63	12	75	75
1910	43	8	23	21	88	88	63	40	20	3	17	138	63	12	63	75
1911	43	8	23	21	88	88	63	40	20	3	17	138	63	12	63	75
1912	42	8	31	29	88	88	63	45	25	3	17	138	63	12	63	75
1913	42	8	29	27	88	88	63	45	25	3	17	138	63	12	63	75
1914	43	8	28	26	88	88	63	39	19	3	17	138	63	12	63	75
1920	61	5	10	10	40	40	20	3	3	0	0	0	0	0	0	40
1921	62	5	18	16	40	40	20	13	10	3	0	0	0	0	0	40
1922	62	6	15	13	0	0	17	13	10	3	0	0	0	0	0	33
1923	62	6	18	16	0	0	17	15	12	3	0	0	0	0	0	33
1924	62	6	20	16	0	0	33	21	12	6	3	0	0	0	0	83
1925	62	7	21	16	0	0	43	21	15	6	0	0	0	0	0	86
1926	62	7	28	16	29	0	43	34	15	15	5	14	0	14	0	157
1927	63	7	27	19	29	0	43	37	16	19	2	14	0	14	0	200
1928	63	7	29	19	29	0	43	39	16	21	2	14	0	14	0	229
1929	63	7	30	19	29	0	43	42	16	24	2	14	0	14	0	214
1930	63	7	30	19	29	0	43	45	16	27	2	14	0	14	0	229
1931	63	7	30	19	29	0	43	42	16	26	0	14	0	14	0	200
1932	64	7	35	22	43	0	57	51	18	33	0	29	0	29	0	271
1933	64	7	44	22	71	0	57	84	18	56	10	129	0	43	86	271
1934	65	7	46	23	71	0	71	108	26	66	16	129	0	43	86	314
1935	66	7	46	23	71	29	71	109	29	66	14	129	14	29	86	314
1936	67	7	71	29	71	29	71	454	32	71	353	157	14	29	114	643
1937	66	7	75	29	71	29	71	454	34	85	335	86	14	14	58	671
1938	66	7	75	29	71	29	71	471	35	101	335	100	14	14	72	671
1939	65	7	80	31	71	57	71	472	33	105	333	100	28	14	58	671

## Notes:

1. Column headings at left indicate percentage of nations having one or more alliances of the specified class in that year.
2. Column headings on right indicate the alliance involvement index (AII) for specified type of nations and specified classes of alliances.

(a) percentage of all members in any class of alliance; (b) percentage of all members in a defense pact; (c) percentage of major powers in any class of alliance; (d) percentage of major powers in a defense pact; and (e) percentage of major powers in any

class of alliance with one or more minor powers.

The nine columns on the right hand side show what we call the Alliance Involvement Index, and this figure is computed for different types of nations and different

Table 6. *Annual alliance aggregation in central system, 1815-1939*

Year	No. of Nations	No. of Maj. Powers	% in Any	% in Def.	% Majs. in Any	% Majs. in Def	% Maj./Min.	All Any	All Def.	All Neut.	All Ent.	All Maj. Any	All Maj. Def.	All Maj. Neut.	All Maj. Ent.	All Maj./Mitu.
1815	13	5	40	30	80	80	0	46	46	0	0	120	120	0	0	0
1816	13	5	30	30	80	80	0	46	46	0	0	120	120	0	0	0
1817	13	5	30	30	80	80	0	46	46	0	0	120	120	0	0	0
1818	13	5	30	30	80	80	0	46	46	0	0	120	120	0	0	0
1819	13	5	38	38	100	100	0	77	77	0	0	200	200	0	0	0
1820	13	5	38	38	100	100	0	77	77	0	0	200	200	0	0	0
1821	13	5	38	38	100	100	0	77	77	0	0	200	200	0	0	0
1822	13	5	38	38	100	100	0	77	77	0	0	200	200	0	0	0
1823	13	5	38	38	100	100	0	77	77	0	0	200	200	0	0	0
1824	13	5	15	15	40	40	0	15	15	0	0	20	20	0	0	0
1825	13	5	15	15	40	40	0	15	15	0	0	20	20	0	0	0
1826	13	5	15	15	40	40	0	15	15	0	0	20	20	0	0	0
1827	13	5	38	15	100	40	0	31	8	0	23	80	20	0	60	0
1828	14	5	35	14	100	40	0	29	7	0	22	80	20	0	60	0
1829	14	5	35	14	100	40	0	29	7	0	22	80	20	0	60	0
1830	15	5	33	13	100	40	0	27	7	0	20	80	20	0	60	0
1831	15	5	13	13	40	40	0	7	7	0	0	20	20	0	0	0
1832	15	5	13	13	40	40	0	7	7	0	0	20	20	0	0	0
1833	15	5	40	27	60	40	20	27	14	0	13	60	20	0	40	20
1834	15	5	53	53	100	80	60	67	53	0	14	80	40	0	40	100
1835	15	5	53	53	100	80	60	67	53	0	14	80	40	0	40	100
1836	15	5	53	53	100	80	60	67	53	0	14	80	40	0	40	100
1837	15	5	53	53	100	80	60	67	53	0	14	80	40	0	40	100
1838	15	5	53	53	100	80	60	67	53	0	14	80	40	0	40	100
1839	15	5	53	53	100	80	60	67	53	0	14	80	40	0	40	100
1840	15	5	33	33	80	80	80	67	67	0	0	120	120	0	0	80
1841	15	5	47	40	100	80	40	60	46	0	14	80	40	0	40	80
1842	15	5	47	40	100	80	40	60	46	0	14	80	40	0	40	80
1843	15	5	47	40	100	80	40	60	46	0	14	80	40	0	40	80
1844	15	5	47	40	100	80	40	60	46	0	14	80	40	0	40	80
1845	15	5	47	40	100	80	40	60	46	0	14	80	40	0	40	80
1846	15	5	47	40	100	80	40	20	7	0	13	80	40	0	40	80
1847	15	5	20	13	60	40	0	20	7	0	13	60	20	0	40	0
1848	15	5	20	13	60	40	0	20	7	0	13	60	20	0	40	0
1849	15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1850	15	5	20	13	60	40	0	20	7	0	13	60	20	0	40	0
1851	15	5	20	13	60	40	0	20	7	0	13	60	20	0	40	0
1852	15	5	20	13	60	40	0	20	7	0	13	60	20	0	40	0
1853	15	5	20	13	60	40	0	20	7	0	13	60	20	0	40	0
1854	15	5	20	13	60	40	0	20	7	0	13	60	20	0	40	0
1855	15	5	13	13	40	40	0	7	7	0	0	20	20	0	0	0
1856	15	5	13	13	40	40	0	7	7	0	0	20	20	0	0	0
1857	15	5	13	13	40	40	0	7	7	0	0	20	20	0	0	0
1858	15	5	13	13	40	40	0	7	7	0	0	20	20	0	0	0
1859	15	5	27	27	40	40	20	13	13	0	0	20	20	0	0	20
1860	15	5	13	13	33	33	0	7	7	0	0	17	17	0	0	0
1861	15	6	33	13	66	33	33	27	7	0	20	33	17	0	16	33
1862	15	6	33	13	66	33	33	27	7	0	20	33	17	0	16	33
1863	15	6	20	20	50	50	0	13	13	0	0	33	33	0	0	0

Year	No. of Nations	No. of Maj. Powers	% in Any	% in Def.	% Majs. in Any	% Majs. in Def	% Maj./Min.	AII Any	AII Def.	AII Neut.	AII Ent.	AII Maj. Any	AII Maj. Def.	AII Maj. Neut.	AII Maj. Ent.	AII Maj./Min.
1864	15	6	20	20	50	50	0	13	13	0	0	33	33	0	0	0
1865	15	6	13	13	33	33	0	7	7	0	0	17	17	0	0	0
1866	15	6	13	13	33	33	0	7	7	0	0	17	17	0	0	0
1867	15	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1868	15	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1869	15	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1870	15	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1871	15	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1872	15	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1873	15	6	20	0	50	0	0	20	0	0	20	50	0	0	50	0
1874	15	6	20	0	50	0	0	20	0	0	20	50	0	0	50	0
1875	15	6	20	0	50	0	0	20	0	0	20	50	0	0	50	0
1876	15	6	20	0	50	0	0	20	0	0	20	50	0	0	50	0
1877	15	6	20	0	50	0	0	27	0	7	20	67	0	17	50	0
1878	17	6	29	12	50	0	17	29	6	6	17	67	0	17	50	17
1879	17	6	24	24	33	33	17	12	12	0	0	17	17	0	0	17
1880	17	6	24	24	33	33	17	12	12	0	0	17	17	0	0	17
1881	17	6	24	12	50	33	17	24	6	18	0	50	17	33	0	17
1882	17	6	29	17	67	50	17	35	17	18	0	100	50	50	0	17
1883	17	6	35	23	67	50	33	47	29	18	0	100	50	50	0	50
1884	17	6	35	23	67	50	33	47	29	18	0	100	50	50	0	50
1885	17	6	35	23	67	50	33	47	29	18	0	100	50	50	0	50
1886	17	6	35	23	67	50	33	47	29	18	0	100	50	50	0	50
1887	17	6	47	23	84	50	33	71	29	29	13	116	50	33	33	83
1888	17	6	47	23	84	50	50	71	35	24	13	100	50	17	33	100
1889	17	6	47	29	84	50	50	71	35	24	13	100	50	17	33	100
1890	17	6	53	29	84	50	50	71	40	18	13	100	50	17	33	100
1891	17	6	53	29	100	50	50	71	40	13	18	100	50	0	50	100
1892	17	6	53	29	100	50	50	71	40	13	18	100	50	0	50	100
1893	17	6	53	29	100	50	50	71	40	13	18	100	50	0	50	100
1894	17	6	53	41	100	83	50	71	47	12	12	100	67	0	33	100
1895	19	7	47	35	86	71	43	64	42	11	11	86	57	0	29	86
1896	19	7	41	35	71	71	57	47	42	0	5	71	57	0	14	57
1897	19	7	41	35	71	71	57	53	42	0	11	86	57	0	29	57
1898	19	7	41	35	71	71	57	53	42	0	11	86	57	0	29	57
1899	20	8	50	45	63	63	63	55	45	0	10	75	50	0	25	63
1900	20	8	50	45	63	63	63	60	45	0	15	88	50	0	38	63
1901	20	8	50	45	63	63	63	60	45	0	15	88	50	0	38	63
1902	20	8	50	50	88	63	63	65	50	5	10	100	63	12	25	63
1903	20	8	45	45	88	88	50	55	45	5	5	88	63	12	12	50
1904	20	8	50	45	88	88	63	65	45	5	15	100	63	12	25	63
1905	21	8	48	44	88	88	63	62	43	5	14	100	63	12	25	63
1906	21	8	48	44	88	88	63	62	43	5	14	100	63	12	25	63
1907	21	8	48	44	88	88	63	81	43	5	33	138	63	12	63	75
1908	22	8	50	42	100	88	63	82	41	5	36	150	63	12	75	75
1909	22	8	50	42	100	88	63	82	41	5	36	150	63	12	75	75
1910	22	8	45	40	88	88	63	77	41	5	31	138	63	12	63	75
1911	22	8	45	40	88	88	63	77	41	5	31	138	63	12	63	75
1912	22	8	60	55	88	88	63	86	50	5	31	138	63	12	63	75
1913	22	8	55	50	88	88	63	86	50	5	31	138	63	12	63	75
1914	23	8	53	49	88	88	63	74	38	5	31	138	63	12	63	75

Notes:

1. Column headings at left indicate percentage of nations having one or more alliances of the specified class in that year.
2. Column headings on right indicate the alliance involvement index (AII) for specified type of nations and specified classes of alliances.

classes of alliance by dividing the number of national alliance commitments of the specified class by the number of nations of the specified type in the system that year. Thus, the AII score ranges from zero for several classes in quite a few years, to a high of 671 for majors allied with minors in any class of central system commitment during the three years prior to World War II. To put it differently, when the AII is equal to 100, there are as many alliance commitments of a given class as there are nations of the specified type. The figure is nothing but an artificial index designed to provide a standardized score, so that trends and shifts in alliance involvement in the central and total systems may be readily discerned.

As to the usefulness of these two sets of alliance aggregation indicators, several possibilities come to mind. For validation purposes and in order to develop a fuller description of the international system and its changes over time, one might compare these scores with measures of such other systemic properties as trade, mail, migration, diplomatic representation, diplomatic communication, exchange of military missions, and so forth. The objective here would be to compare a number of different, and more or less independent, measures of the webs and links and bonds within the system as they rise and/or fall over time.

Alliance aggregation may also be examined in its role as either a dependent or an independent variable. That is, its fluctuations might be correlated with fluctuations in phenomena that allegedly 'cause' or are 'caused' by alliance bonds: war, internal upheaval, ideological or territorial cleavages within the system, technological diffusion, or other structural or cultural attributes of the system. In the study of

which this paper is a small part, our concern is with the ways in which alliance aggregation, alone and in conjunction with other national and systemic phenomena, correlates with war, status shifts, conflict management and the like.

##### 5. *Partnership in war: A simple performance index*

As indicated above, our major purpose in gathering these alliance data was to examine some of the relationships between alliance involvement and configurations on the one hand, and the frequency, severity, and magnitude of war, on the other. Central to our theoretical formulation, and perhaps equally crucial to other users of these alliance data, is the assumption that alliances do in fact impose constraints and obligations upon their adherents which would not have existed, or would have been much weaker, had the alliance not existed. Is there any evidence that the assumption is correct?

In order to test the assumption for the nations and period under examination, a variety of complex and time-consuming *ex-post-facto* experiments come to mind. One approach to such an experiment would focus on the motivations, expectations, and perceptions of the decision-makers who participate in the alliance-negotiating process. The other would focus on the correlation between the specific obligations assumed and the execution of those obligations when and if the stated contingency arose. Although a detailed examination along either of these lines is feasible, we are not persuaded that it is necessary — or, at least, deserving of high priority at this stage. Thus, we followed a more modest strategy with the consequences indicated below.

If alliance commitments reflect both a



congruence of interests among the signatories and a constraint on their future freedom of action, it would seem reasonable to expect that, when an alliance member gets into war, the behavior of its partners would be something other than random. That is, alliance partners would be expected to fight alongside one another *more* often than non-partners, and against one another *less* often than others. Has this, in fact, been the case?

In order to offer a tentative answer to the question, we developed a primitive measure of performance in the event of war. The first step was to identify all possible performance opportunities open to all alliance partners during the entire 125-year period. By performance opportunity, we do not mean the opportunity to fulfill the specific commitment described in the treaty when the specific contingency described in that treaty arose. Rather, we refer to only one class of contingency (any alliance partner getting involved in any one of the forty-one international wars which occurred during the period), and three types of possible behavior by the warring nation's allies: fight alongside the ally, remain militarily neutral, or fight against the partner.<sup>9</sup> The scoring rules were as follows: for each war, the behavior of each alliance partner was classified as *A* (aided militarily), *N* (remained militarily neutral) or *O* (opposed militarily). Thus, in the case of a simple bilateral alliance, if both partners fought on the same side, we entered a 2 alongside the *A* row, and nothing in the *N* or *O* rows; if they fought on opposite sides, we entered 2 in the *O* row, and nothing in the *A* or *N* rows; and if one remained neutral while the other fought, we scored 2 for *N*. To take a more complex case, if there were 6 partners, and two fought alongside one another, three remained neutral, and one joined in aiding the enemy, the scoring was: *A* = 2, *N* = 3, and *O* = 1. To illustrate, in the case of the Triple Alliance in 1914, Austria and

Germany contributed 2 *A*'s, and Italy contributed an *N*. And if, as was the case in the Anti-Comintern Pact of 1936, partners became involved in two separate wars (Japan versus China in 1937 and Germany versus the Allies in 1939), two separate sets of performance opportunity were coded. In sum, the highest possible performance score was a case in which all members fought on the same side, and the lowest was one in which half fought on one side and half fought on the other.

Now, in order to make statements of *relative* performance, it was necessary to score the performance not only of alliance members, but of the general population of system members, allied or not. To provide this benchmark information, the same simple scoring procedure was used. We again referred to our compilation of all 41 international wars and their participants, and scored an *A* for each nation fighting on the more numerous side, an *O* for each nation fighting on the less numerous side, and an *N* for all other nations in the system. And, as will be evident below, these computations for both the allied nations and the general system membership were run for three different populations: the total international system, the central system only, and, in our most selective sample, major powers only. The results are shown in Tables 7 through 11.

Looking first at the results of our effort to establish a norm or benchmark, we examined all nations in all wars for the period, and found the distribution indicated in Table 7. In 1744 war performance opportunities open to all members of the total system, 5 percent of the actions

Table 7. *War performance of all nations, allied or not, 1815-1945*

	Total System	Central System	Major Powers
% Aided	05 (80)	06 (45)	20 (25)
% Neutral	91 (1591)	88 (684)	68 (87)
% Opposed	04 (73)	06 (48)	12 (15)
N	(1744)	(777)	(127)

are accounted for by nations on the more numerous side aiding one another militarily, 4 percent by nations on the other side, with 91 percent of the war performance opportunities taken up by non-participation or military neutrality. If we restrict our examination to the central system only, there were 777 such opportunities, with 6 percent going to mutual military aid on each side, and 88 percent of the actions being those of neutrality. And if we then concentrate on a still smaller sample and look only at the major powers, we find that there were 127 opportunities, of which 20 percent were military aid on one side, 12 on the other, and a relatively low 68 percent remaining neutral. The thing to note is the symmetry of all three distributions. That is, whether we examine all members of the international system, central system members only, or major powers alone, the percentage who fought on either side is remarkably similar, with the neutral role being the one most frequently taken. Given the fact that 26 of the 41 wars were bilateral ones, the former figures need not surprise us. Furthermore, as Table 8 shows, the same pattern holds for the nineteenth century alone. One interesting point here

Table 8. *War performance of all nations, allied or not, 1815-1899*

	Total System	Central System	Major Powers
% Aided	03 (28)	06 (10)	15 (11)
% Neutral	91 (855)	83 (139)	78 (55)
% Opposed	06 (42)	11 (18)	07 (5)
N	(925)	(167)	(71)

is that major powers in both centuries show the lowest propensity to remain neutral, and the central system members fall in the middle position as regards neutrality in war.

Having seen the performance distributions for all nations, allied or not, we now have a benchmark against which the performance of nations *with* specific

alliance obligations may be measured. As Table 9 makes abundantly clear,

Table 9. *War performance of allied nations only, 1815-1945*

	Total System	Central System	Major Powers
% Aided	23 (56)	20 (40)	33 (36)
% Neutral	74 (183)	76 (153)	62 (69)
% Opposed	03 (8)	04 (8)	05 (6)
N	(247)	(201)	(111)

alliance commitments do indeed make a difference. That is, the percentage of actions in military support of one's allies rises from 5 to 23 for the total system, from 6 to 20 for central system members, and from 20 to 33 for major powers. Conversely, the percentage of non-warring, neutral actions drops from 91 to 74 for the total system, from 88 to 76 for central system nations, and from 68 to 62 for the major powers. The drop in percentage of actions *against* an ally drops less dramatically but quite consistently, from 4 to 3, 6 to 4, and 12 to 5 respectively.

For a more detailed breakdown of the performance of allies when a partner gets into war, we can turn to Tables 10 and 11. Here we note that if a time lag is allowed, it has a decided effect; if alliance partners are given not only the active life of the treaty commitment, but an extra three years to perform, their likelihood of coming to the military support of the ally, or former ally, rises consistently, while the likelihood of remaining neutral drops comparably. On the other hand, with the single exception of class I (defense pacts) among central system members, the propensity to fight against one's ally also rises. In other words, with more time, the probability of an alliance member or ex-member getting into war on either side goes up.

Returning, however, to our central concern, these two Tables further confirm the hypothesis that alliance commitments are meaningful and that they help influence the behavior of the signatories.

Table 10. *War performance of allied nations, by alliance class, 1815-1945, during life of alliance*

	Total System			Central System Only			Major Powers Only		
	I	II	III	I	II	III	I	II	III
% Aided	33	9	15	32	0	15	48	0	28
% Neutral	65	93	80	66	93	80	48	100	65
% Opposed	02	07	05	20	07	05	04	0	07

Table 11. *War performance of allied nations, by alliance class, 1815-1945, during or within three years after life of alliance*

	Total System			Central System Only			Major Powers Only		
	I	II	III	I	II	III	I	II	III
% Aided	36	10	20	37	10	20	49	11	33
% Neutral	60	72	70	57	72	70	46	78	54
% Opposed	04	18	10	06	18	10	05	11	13

That is, if we look at the figures for defense pact members (class I), we find that nations with such commitments are more likely to come to the defense of their partners than nations with commitments to remain neutral (class II) or merely consult, as in an entente (class III). Likewise, we find that nations with neutrality commitments are more likely to remain neutral than signatories to defense pact or ententes.

If we combine these specific results with the more general pattern found in our comparison between nations belonging to alliances and the population of nations as a whole, it is perfectly evident that our original assumption is a fully justified one. That is, nations with alliances do, in a systematic and predictable fashion, behave differently from the general population of nations during the period under consideration. We are not, of course, saying that every alliance commitment was honored; even without the lengthy and complex process essential to a more specific measure of alliance performance, it is evident that many such commitments were not honored. But the consistent and regular difference between the war performance of alliance signatories and all

others makes it clear that the alliance commitment is indeed a meaningful one.

#### 6. *Inter-correlations among indicators*

Another procedure that is often used to ascertain whether or not a given index or measure is meaningful and valid is to examine the extent to which several more or less independent measures rise and fall together. If, over time, these indicators do show — via the Pearson product-moment correlation, or a comparable statistic — a high degree of co-variation, we are relatively justified in assuming that they tap essentially the same phenomenon. To what extent, then, do our various alliance aggregation indicators reveal such co-variation?

In Table 12, we show the  $r$  values, or correlation coefficients, among our gross alliance aggregation measures, and it is clear at a glance that when any of them is high, the others are high, and vice-versa. That is, the coefficient may range from zero to one, and the closer to one it is, the higher the co-variation. How close to one the figure must be in order to be considered statistically significant, is a function of the number of observation made of each particular pair of indicators. With 120 (1815-1914, 1920-39) pairs of

observations, the laws of probability tell us that the likelihood of any of these figures coming out higher than .25 is less than one in a hundred; thus, any *r* value which is higher than .25 (the decimal point is omitted in the Tables) is italicized to indicate that it is statistically significant at the .01 level.<sup>10</sup> For both the central and total systems, every correlation is, therefore, one which had a very low probability of occurring by chance alone; in other words, when the percentage of nations in any

class of alliance is high, the figure for those in defense pacts or for majors allied with minors in any class is also high, and when one of these is low, the others are also low.

In Table 13, the same type of information is shown, but for the alliance involvement indicators (AII) primarily. Here we again see that, with a few exceptions noted below, when the ratio between alliance commitments and the number of nations capable of having the specific class of alliance commitment is high for

Table 12. *Co-variation for alliance aggregation indicators for total and central systems*  
(*N* = 120; *r* ≥ .25 at .01 level)

	<i>Total System</i>					<i>Central System</i>				
	% of Nations in Any Alliance	% of Nations in Defense Pacts	% of Majors in Any Alliance	% of Majors in Defense Pacts	% of Majors Allied with Minor	% of Nations in Any Alliance	% of Nations in Defense Pacts	% of Majors in Any Alliance	% of Majors in Defense Pacts	% of Majors Allied with Minor
% of Nations in Any Alliance . . . . .										
% of Nations in Defense Pacts . . . . .	77					82				
% of Majors in Any Alliance . . . . .	52	53				79	77			
% of Majors in Defense Pacts . . . . .	35	60	81			60	84	83		
% of Majors Allied with Minor . . . . .	44	50	60	68		62	75	66	51	

Table 13. *Co-variation of alliance activity and aggregation indicators for total and central systems*  
(*N* = 120; *r* = .25 at .01 level)

	<i>Total System</i>										
	AII Any Class	AII Defense	AII Neutrality	AII Entente	AII Majors, Any	AII Majors, Defense	AII Majors, Neutrality	AII Majors, Entente	AII Majors with Minors	% of Nations in Any	% of Nations in Defense
AII Any Class . . . . .											
AII Defense . . . . .	51										
AII Neutrality . . . . .	49	-31									
AII Entente . . . . .	79	-11	73								
AII Majors, Any . . . . .	28	15	24	18							
AII Majors, Defense . . . . .	16	39	-13	-09	79						
AII Majors, Neutrality . . . . .	-08	-44	44	16	27	-07					
AII Majors, Entente . . . . .	29	15	46	42	47	-11	15				
AII Majors with Minors . . . . .	90	66	36	55	11	02	-13	22			
% of Nations in Any . . . . .	90	58	46	59	44	29	-03	36	87		
% of Nations in Defense . . . . .	59	87	-06	05	38	51	-33	04	67	77	

<i>Central System</i>											
	AII Any Class	AII Defense	AII Neutrality	AII Entente	AII Majors, Any	AII Majors, Defense	AII Majors, Neutrality	AII Majors, Entente	AII Majors with Minors	% of Nations in Any	% of Nations in Defense
AII Any Class .....											
AII Defense .....	34										
AII Neutrality .....	83	05									
AII Entente .....	96	09	77								
AII Majors, Any .....	41	80	20	21							
AII Majors, Defense .....	10	82	-17	-10	79						
AII Majors, Neutrality .....	25	03	55	15	27	-07					
AII Majors, Entente .....	49	15	39	48	47	-11	14				
AII Majors with Minors .....	90	16	93	85	18	-16	36	43			
% Of Nations in Any .....	69	70	49	52	68	33	26	63	61		
% of Nations in Defense .....	31	87	02	10	64	55	03	30	20	80	

one commitment class or nation type, it is also high for the others.

Note that defense pacts and alliances of any class show a high co-variation, and that both of these correlate strongly with the two other aggregation indicators; and since the two shown here are revealed in Table 12 as correlating significantly with the other three, it can safely be assumed that all five of the percentage aggregation scores will co-vary strongly with the two AII scores mentioned above.

On the other hand, there are several pairs of indicators that have no consistent relationship to one another, and even (in the total system) a few which show statistically significant negative correlations. Dealing with the latter first, we see that as the alliance involvement indicator for defense pacts among any and all nations goes up, those for neutrality pacts among all, or among majors only, tend to go down. Likewise there is an inverse correlation between major power neutrality pact activity and the percentage of all nations in defense pacts. This lack of positive relationship is further borne out by the fact that most of the weak or almost non-existent correlations are found in the neutrality pact or entente rows or columns,

for both the total and central system. Depending upon one's theoretical interests, one could examine these intercorrelation Tables in combination with the annual distributions of the several alliance measures (Tables 5 and 6) and, with these two sets of figures alone, test a number of hypotheses regarding alliance involvement.

#### 7. Summary and interpretation

We have tried here to provide a single reliable source of certain alliance data for a relatively long, as well as theoretically intriguing, period in the life of the international system. By the consistent application of explicit coding rules, we have converted a scattered welter of non-systematic information into scientifically useful data. It is, of course, our conviction that such alliance data may be of real value in either the dependent or independent variable role. Conversely, we have not made any serious effort here so to use our results; we have not sought to predict either from, or to, these data beyond the modest but necessary exercise in evaluating the 'seriousness' of formal alliance commitments.

On the other hand, a few fairly obvious patterns show up quite clearly, and, rather than leave these modest but interesting

regularities implicit, we should like to close the paper with a brief and tentative discussion of them. The pattern which stands out most clearly (but which remains to be operationalized) is the changing type, composition, and duration of alliances during various periods in our 125-year span. Simply put, there seem to be three discernible periods, each reflecting different and characteristic alliance patterns.

The first period might be thought of as spanning the years 1815 through 1878. It was characterized by a relatively high degree of stability, measured in terms of the number of battle casualties sustained in war or the number of nation months spent in war. That is, if we look at Table 14 and compare this period with our two other periods for these two variables, an impressive difference appears, especially if we consider the number of years embraced.

Table 14. *Magnitude and severity of war for three different time periods, 1815–1945*  
(Figures adapted from Singer, Small and Kraft, 1965)

Period	Nation		Battle Deaths
	No. of Years	Months of War	
I: 1815–1878	63	488.5	1,003,000
II: 1879–1919	40	943.0	10,349,000
III: 1920–1945	25	1321.5	17,350,000

We might say that this period marked the heyday of the balance of power. Defense pacts among central system members were few (6) and brief (average duration 4.3 years), and they were by and large entered into in response to a given potential disturbance of the Concert and its settlement. More interesting, perhaps, was the lateral mobility of the major powers. For example, England left the Quadruple Alliance in 1840 in order to join the conservative courts against French ambitions in the Middle East; Austria broke away from the Holy Alliance in

1853 and lined up with France and England against her traditional ally, the Czar; and both Austria and Germany effectively destroyed the Three Emperors' League in 1878 by failing to support Russia after her victory over Turkey, lining up with France and England at the Berlin Conference. In all of these cases, the powers maintained their new commitments just long enough to counter the perceived threat to the European state system, and then returned to the more flexible entente arrangements with their traditional and 'natural' allies.

The other dominant pattern of the period was the modest role allowed to the minor powers. Outside of Turkey (whose status was essentially an intermediate one), none of them were involved in any of the temporary coalitions within the central system. Nor were they found with any frequency in the more long-term class III alliances.

If the 1815–78 period can be characterized as the prime of the balance of power mechanism, the next forty years clearly mark its passage into atrophy. Though less than two-thirds as long, the years between 1879 and 1919 saw twice as many nation months of war and more than ten times as many battle deaths due to such armed conflict. Conceivably there is some causal relationship between these outcomes and the sharp changes in alliance activity. Class I alliances not only involve more nations, but they last considerably longer. The major powers deprive themselves of lateral mobility to a considerable extent through the development of quasi-permanent defense commitments, and only Italy among the major powers actually deserts (in 1902) one set of partners. Even this exceptional case is not a complete switch inasmuch as the Italians renewed their alliance with the Central powers, and thus maintained a foot in both camps.

Finally, as the more stable multipolar system gradually evolved into a rigid

bipolar one, some smaller nations found themselves increasingly involved. And rather than contributing to the system's stability, they gave up whatever flexibility they might have enjoyed, and sought security or aggrandizement under the wing of either of the alliance blocs. In sum, the major powers — for reasons which go well beyond the limits of this paper — seemed to give greater attention to their immediate and long-run security needs, and less attention to the effect of their behavior on the system as a whole. They contracted defensive alliances early and adhered to them with impressive rigidity. If the central system powers were indeed already on the road to permanent bipolar cleavage, they certainly did little of a self-correcting nature to reverse the trend.

If one is tempted, however, to attribute World War I to the failure of the major powers to adhere to the balance of power rules (insofar as preservation of the alliances took priority over preservation of the system), our third period offers grounds for real hesitation. This 20-year span culminating in the catastrophe of World War II showed some sharply different alliance configurations, yet the net result was essentially the same. Through 1938, the major powers eschewed the early and lasting defense pact, with the Franco-Russian treaty of 1935 a single exception, lasting only four years at that. Rather, they returned to the mid-nineteenth century pattern of high lateral mobility, moving in and out of ententes at a high rate. This period also saw frequent use of the neutrality and non-aggression pact. But, whereas the prior century had seen these class II agreements consummated for brief periods of emergencies in order to protect an exposed or vulnerable flank, the inter-war period saw them entered into well before they might be dictated by military necessity, and perpetuated well beyond any specific crisis. Moreover, they were often entered into with little regard for the strategic realities of the time, or

baldly violated by such major powers as Germany and Russia in 1939 and 1940.

This period also saw a shift in minor power behavior, with the growing appearance of regional arrangements of all three classes, especially in the Balkans. These treaties were seldom directed toward either a major power or an outside area; their purpose was by and large modest and proximate.

In conclusion, we note that all three of the posited periods differed markedly from one another in regard to the alliance patterns which emerged, yet none was exactly free of war. In other words, we find no obvious and consistent co-variation between alliance activity and war, even though each period is distinct in both regards. We are, however, persuaded that a meaningful relationship might be found, but only as the consequence of a more detailed and systematic inquiry than the one outlined here. In subsequent papers, we intend to explore the alliance-war relationship, and our major purpose here was to provide the operational data without which any rigorous correlational investigation remains impossible.

#### APPENDIX I — SOURCES OF ALLIANCE INFORMATION

Note: For each of the 112 treaties of alliance which met our coding criteria, we list the signatories and month and year of inception, followed by the sources most heavily utilized. The first source listed contains the treaty text, except for alliance numbers 8, 12, 15 and 53, for which full texts were unavailable; subsequent sources were used for classifying the alliance commitment, further identifying the signatories, confirming date of inception and ascertaining effective date of termination, and interpreting both the commitment and its fulfillment. Only the author's name and year of publication is used for identification here, with full citations found in the References; *BFS* and *L* refer to *British Foreign and State Papers* and the

League of Nations' *Treaty Series* respectively, our two most heavily used sources.

1. Austria, Baden, Bavaria, Hanover, Hesse-Electoral, Hesse-Grand Ducal, Mecklenberg-Schwerin, Prussia, Saxony, Württemberg; 6/15  
*BFS*, 2, p. 114; Albrecht-Carrié (1958), 128-30; Friedjung (1912), 132; Hallberg (1955), 19; Steefel (1932), 260-61; Taylor (1954), 43-44, 155-58, 166.
2. Austria, England, France, Prussia, Russia; 11/15  
*BFS*, 3, pp. 273-80; *BFS*, 6, pp. 14-15; Albrecht-Carrié (1958), 25; Artz (1934) 168-70; Bourquin (1954), 245, 271; Kissinger (1957), 312; Phillips (1920), 259; Pirenne (1949), 380.
3. England, France, Russia; 7/27  
*BFS*, 14, p. 633-39; Driault (1925), 461-65; Lobanov-Rostovsky (1954), 50-51; Ward (Ed.) II (1923), 100-03.
4. Russia, Turkey; 7/33  
*BFS*, 20, p. 1176-80; Albrecht-Carrié (1958), 52, 55; Lobanov-Rostovsky (1954), 72-74, 80; Marriot (1917), 215-18; Mosely (1934), 105; Puryear (1935), 84-92, 105; Webster II (1951), 554-55, 671-72.
5. Austria, Prussia, Russia; 10/33  
Martens (Ed.), IV, Part I (1878), 447-49; Hallberg (1955), 49-50; Henderson (1947), 154-55; Lobanov-Rostovsky (1954), 105, 106-07, 123; Taylor (1954), 30,61; Webster (1934), 156.
6. England, France, Portugal, Spain; 4/34  
*BFS*, 22, p. 125-42; Albrecht-Carrié (1958), 57; Droz (1959), 347; Guyot (1926), 220-21, 288-89; Seton-Watson (1938), 244-46; Ward II (1923), 179-81, 191-92, 195-98.
7. Austria, England, Prussia, Russia, Turkey; 7/40  
*BFS*, 29, pp. 703-05.
8. England, Russia; 6/44  
Henderson (1947), 4; Lobanov-Rostovsky (1954), 85, 152-53; Puryear (1931), 255; Temperly (1936), 256.
9. Austria, Modena; 12/47  
*BFS*, 36, p. 1169.
10. Austria, Parma; 1851  
*BFS*, 36, p. 1171.
11. France, Sardinia; 1/59  
Cavour (1926), 311-15.
12. Modena, Parma, Tuscany; 1859  
King, II (1899), 95.
13. Ecuador, Peru; 1860  
*BFS*, 50, p. 1086; Galvez, II (1919), 110.
14. England, France, Spain; 10/61  
*BFS*, 61, p. 63; Dawson (1935), 241-43.
15. Prussia, Russia; 2/63  
Brandenburg, III (1932), 231-32; Lobanov-Rostovsky (1954), 225.
16. Colombia, Ecuador; 1/64  
*BFS*, 63, p. 261.
17. Baden, Prussia; 8/66  
*BFS*, 56, p. 1037.
18. Prussia, Württemberg; 8/66  
*BFS*, 56, p. 1141.
19. Bavaria, Prussia; 8/66  
*BFS*, 56, p. 1043.
20. Bolivia, Peru; 2/73  
*BFS*, 70, pp. 214-16.
21. Austria, Germany, Russia; 10/73  
Pribram, II (1920), 185-87; Albrecht-Carrié (1958), 176; Langer (1931), 162-65; Lee (1934), 123; Seton-Watson, R. W. (1935), 533.
22. Austria, Russia; 1/77  
Pribram, II (1920), 191-204; Albrecht-Carrié (1958), 172; Rupp (1941), 531-35; Taylor (1954), 247.
23. England, Turkey; 6/78  
*BFS*, 69, p. 744; Coolidge (1917), 147-48; Knaplund (1935), 133-38; Lee (1934), 164; Seton-



- Watson, R. W. (1935), 519-20; Taylor (1954), 268.
24. Austria, Germany, Italy, 10/79, 5/82  
Pribram, I (1920), 65-69, 75, 104-14, 150-63, 216-19, 221-35, 244-59; Albertini, I (1957), 351-47; Croce (1929), 273-75; Schmitt (1930), 410-18; Taylor (1958), 439.
  25. Austria, Germany, Italy, Rumania; 10/83  
Pribram, I (1920), 79-85, 85-88, 162-73, 174-80, 202-15 261-73; Albertini, I (1957), 575-81; Langer (1931), 334; Renouvin (1928), 318-20; Schmitt (1930), 429-31.
  26. Austria, Germany, Russia; 6/81  
Pribram, I (1920), 37-41, 91-93; Goriainov (1918), 330; Langer (1931), 415-17; Renouvin (1954), 33-34; Seton-Watson, R. W. (1955), 175.
  27. Austria, Serbia; 6/81  
Pribram, I (1920), 135-41; Albertini, I (1957), 138; Langer (1951), 307; Protitch, (1909), 841.
  28. Germany, Russia; 6/87  
Pribram, I (1920), 274-78; Brandenburg (1933), 27-31; Fuller (1922), 318-19, 322; Langer (1931), 498-503.
  29. Austria, England, Italy; 12/87  
Pribram, I (1920), 94-97, 124-33; Albrecht-Carrié (1958), 221; Penson (1943), 130; Taylor (1954)
  30. Austria, Italy, Spain; 5/87  
Pribram, I (1920), 116-23, 142-46; Becker (1926), 702-03; Mousset (1923), 76-77.
  31. France, Russia; 8/91  
Pribram, I (1920), 206-09, 214-18.
  32. China, Russia; 5/96  
Price (1933), 101-02; Morse (1918), 415N.
  33. Japan, Russia; 6/96  
Rockhill (1904), 430-32, 433; Dallin (1949), 75-76; Seton-  
Watson (1955), 213-14; Taylor (1954), 418.
  34. Austria, Russia; 5/97  
Pribram, I (1920), 184-85, 236-39; Fay, I (1928), 397-99; Schmitt (1937), 244; Nintchitch (1937), 223-28.
  35. England, Portugal; 10/99  
British Documents, I (1927), 93-94.
  36. France, Italy; 12/00  
Pribram, II (1920), 240-57; Barlow (1940), 362, 399; Croce (1929), 273-78; Schmitt (1930), 410-18.
  37. England, Japan; 1/02  
*BFS*, 95, p. 83-84; *BFS*, 98, p. 136-38; *BFS*, 104, p. 173-74.
  38. England, France; 4/04  
British Documents, II (1927), 374-95; Albertini, I (1952), 174; Anderson (1930), 401-02; Barlow (1940), 398-99; Taylor (1954), 439, 471-73.
  39. France, Spain; 10/04  
*Documents Diplomatiques Français*, V (1934), 428-32; Albertini, I (1952), 174; Anderson (1930), 372-73; *BFS*, 100, p. 933-34; Mousset (1923), 158-59; Taylor (1954), 439.
  40. England, Spain; 5/07  
*BFS*, 100, p. 970-71.
  41. France, Japan; 6/07  
*Doc. Dip. Fr.*, XI (1934), 42-43.
  42. Japan, Russia; 7/07  
Price (1933), 107-08, 117
  43. England, Russia; 8/07  
*BFS*, 100, p. 555-60.
  44. Japan, United States; 10/08  
*Foreign Relations of the United States 1908*, 510-11; Bartlett (1956), 477; Davids (1960), 59; Griswold (1962), 131.
  45. Italy, Russia; 10/09  
Albertini, I (1952), 308.
  46. Bulgaria, Serbia; 3/12  
Gueshoff (1915), 112-27; Albrecht-Carrié (1958), 283-84;

- Drossos (1929), 121; Helmreich (1938), 341; Lamouche (1928), 143-48; Taylor (1954), 490.
47. Bulgaria, Greece; 5/12  
Gueshoff (1915), 127-30; Albrecht-Carrié (1958), 283-84; Drossos (1929), 121; Helmreich (1938), 341; Lamouche (1928), 143-48; Taylor (1954), 490.
  48. Greece, Serbia; 6/13  
Driault, V (1925), 115-17, 172; Albrecht-Carrié (1958), 284-85; Frangulis, I (1926), 150; Schmitt (1930), 449-50; Taylor (1954), 496-97.
  49. Czechoslovakia, Yugoslavia; 8/20  
*L*, 6, p. 211-13; *L*, 13, p. 232-35; *L*, 87, p. 309; *L*, 96, p. 309.
  50. Czechoslovakia, Rumania; 4/21  
*L*, 6, p. 217; *L*, 18, p. 82; *L*, 54, p. 253; *L*, 94, p. 53.
  51. Rumania, Yugoslavia; 6/21  
*L*, 54, p. 257, 213.
  52. Czechoslovakia, Rumania, Yugoslavia; 2/33  
*BFS*, 136, p. 630-32.
  53. Belgium, France; 9/20  
Albrecht-Carrié (1958), 505-06; Miller (1951), 181-84; Wullus (1944), 223, 260-63.
  54. France, Poland; 2/21  
*L*, 19, p. 12; Albrecht-Carrié (1958), 506; Seton-Watson, H. (1962), 307; Wheeler-Bennett (1948), 284-86.
  55. Poland, Rumania; 3/21  
*L*, 7, p. 79; *L*, 60, p. 161; *L*, 115, p. 171.
  56. Afghanistan, Turkey; 3/21  
*BFS*, 118, pp. 10-11; *BFS*, 130, p. 369; *BFS*, 141, p. 682.
  57. Persia, Turkey; 4/26  
*BFS*, 136, p. 948; *L*, 106, p. 247.
  58. Afghanistan, Persia; 11/27  
*L*, 107, p. 445.
  59. Afghanistan, Iraq, Persia, Turkey; 9/37  
*L*, 190, p. 21.
  60. Austria, Czechoslovakia; 12/21  
*L*, 9, p. 248; *L*, 78, p. 437.
  61. Estonia, Latvia; 11/23  
*L*, 28, p. 82.
  62. Czechoslovakia, France; 1/24  
*L*, 23, p. 164; *L*, 54, p. 359.
  63. Italy, Yugoslavia; 1/24  
*L*, 24, p. 33; Macartney (1938), 108-09; Seton-Watson, H. (1962), 372; Villari (1956), 49-50.
  64. Czechoslovakia, Italy; 7/24  
*L*, 26, p. 22; Macartney (1938), 195-96; Villari (1956), 198; Voncek (1937), 330-31.
  65. Russia, Turkey; 12/25  
*BFS*, 139, p. 721; *L*, 153, p. 366; *L*, 157, p. 353.
  66. Germany, Russia; 4/26  
Beloff, I (1947), 63; Klein (1952), 145-47.
  67. France, Rumania; 6/26  
*L*, 58, p. 225; *L*, 197, p. 392.
  68. Afghanistan, Russia; 8/26  
*BFS*, 125, p. 2; *L*, 157, p. 371; *L*, 177, p. 467.
  69. Lithuania, Russia; 9/26  
*L*, 60, p. 145; *L*, 125, p. 255; *L*, 186, p. 267.
  70. Italy, Rumania; 9/26  
*L*, 67, p. 393; Macartney (1938), 195-96; Villari (1956), 198; Voncek (1937), 330-31.
  71. Albania, Italy; 11/26  
*L*, 60, p. 15; *L*, 69, p. 341.
  72. France, Yugoslavia; 1/27  
*BFS*, 141, pp. 1018-19; *L*, 68, p. 373; *L*, 182, p. 149.
  73. Hungary, Italy; 4/27  
*BFS*, 127, pp. 737-40.
  74. Persia, Russia; 10/27  
*L*, 112, p. 275.
  75. Greece, Rumania; 3/28  
*L*, 108, p. 187.
  76. Greece, Turkey; 10/30  
*L*, 125, p. 9; *L*, 156, p. 65.
  77. Rumania, Turkey; 10/33  
*L*, 165, p. 273.
  78. Turkey, Yugoslavia; 11/33  
*L*, 161, p. 229.

79. Greece, Rumania, Turkey, Yugoslavia; 2/34  
Geshkoff (1940), 300-02.
80. Italy, Turkey; 5/28  
*BFS*, 129, p. 763; Kilil (1959), 68-69; Lenczowski (1952), 182-83; Lewis (1955), 114-15.
81. Greece, Italy; 9/28  
*BFS*, 129, p. 675-80.
82. Hungary, Turkey; 1/29  
*BFS*, 130, p. 819.
83. Bulgaria, Turkey; 3/29  
*BFS*, 136, p. 927; *L*, 114, p. 400.
84. Bulgaria, Greece, Rumania, Turkey, Yugoslavia; 7/38  
Livian (1940), 177.
85. France, Turkey; 2/30  
*BFS*, 132, p. 777.
86. England, Iraq; 1932  
*BFS*, 132, pp. 280-84.
87. Finland, Russia; 1/32  
*L*, 155, p. 325; *L*, 157, p. 393.
88. Latvia, Russia; 2/32  
*L*, 148, p. 113, 119.
89. Estonia, Russia; 5/32  
*L*, 131, p. 297; *L*, 150, p. 87.
90. Poland, Russia; 7/32  
*L*, 136, p. 41.
91. France, Russia; 11/32  
*L*, 157, p. 411; *L*, 167, p. 395.
92. England, France, Germany, Italy; 6/33  
Villari (1937), 107.
93. Italy, Russia; 9/33  
*BFS*, 136, p. 948.
94. Argentina, Brazil, Chile, Colombia, Finland, Mexico, Panama, Paraguay, Uruguay; 10/33  
*L*, 163, p. 393.
95. Germany, Poland; 1/34  
Gantenbein (Ed.), (1948), 999-1000.
96. Austria, Hungary, Italy; 3/34  
*L*, 154, p. 285.
97. Estonia, Latvia, Lithuania; 8/34  
*L*, 154, p. 93.
98. France, Italy; 4/35  
Triepel (Ed.), XXX (1935), 644-45.
99. Czechoslovakia, Russia; 5/35  
*L*, 159, p. 347.
100. Mongolia, Russia; 3/36  
Friters (1949), 143-44.
101. Egypt, England; 10/36  
*BFS*, 140, pp. 179-82.
102. Germany, Italy, Japan; 11/36, 11/37  
Gantenbein (Ed.), (1948), 988-91.
103. Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, United States, Uruguay, Venezuela; 12/36  
Gantenbein (Ed.), (1950), 772-73.
104. Italy, Yugoslavia; 3/37  
Livian (1940), 171-73.
105. Arabia, Yemen; 4/37  
*BFS*, 141, pp. 1272-75.
106. China, Russia; 8/37  
*L*, 181, p. 101.
107. Portugal, Spain; 3/39  
*BFS*, 143, pp. 673-75.
108. France, Germany; 12/38  
*BFS*, 142, p. 573-74.
109. Germany, Italy; 5/39  
Wiskemann (1949), 350-52.
110. Denmark, Germany; 5/39  
*L*, 197, p. 37.
111. Estonia, Germany; 6/39  
*L*, 198, p. 49.
112. Germany, Latvia; 6/39  
*L*, 198, p. 105.

## NOTES

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<sup>1</sup> Among the more theoretical efforts, several stand out: Gulick (1955), Kaplan (1957), Langer

(1931), Liska (1962), and Rosecrance (1963). Soviet treaty patterns (including those of alliance) have been treated quantitatively by Slusser and Triska (1959).

<sup>2</sup> Our specific purpose was to test certain hypotheses concerning the relationship between alliance aggregation and polarization in the system, on the one hand, and various indices of the frequency, severity, and magnitude of war, on the other. One such study is in press (Singer and Small, 1966b), and another is under way.

<sup>3</sup> A systematic analysis of all treaties, conventions, agreements, etc. which are reported in the U.N. Treaty Series is now under way at the University of Washington under the direction of Peter Rohn.

<sup>4</sup> As a matter of fact, the text of the Franco-Belgian agreement of 1920 remains apparently unpublished in the open sources to this day.

<sup>5</sup> Among the discussions of this issue are Feigl (1956), Gottschalk (1963), Greenwood (1945), Kaplan (1964), Nagel (1960), and Naroll (1962).

<sup>6</sup> It has been suggested by Karl W. Deutsch that two dimensions will be critical in the construction of such an index: (a) the quantity of transactions of varying types; and (b) the extent to which events in one region or nation 'produce' corresponding events in another.

<sup>7</sup> For example, Rumania was still allied with the Central Powers in 1914 as a consequence of an 1883 treaty which had been faithfully renewed on several occasions; yet her declaration of neutrality then and her participation on the side of the Entente in 1916 should have surprised no one. Likewise, the wartime Franco-Soviet pact was still in effect in 1947, yet France was clearly in the anti-Soviet camp by then.

<sup>8</sup> Although the distinction may be too primitive for many theoretical purposes and not too readily operationalized, diplomatic historians have found it quite useful for centuries. Moreover, despite the invisibility of their criteria, they show near-unanimity in the classification results. Thus, our major powers and the dates during which they enjoyed that status are as follows:

Austria-Hungary, 1815-1918  
Prussia or Germany, 1815-1918, 1925-45  
Russia, 1815-1918, 1922-45  
France, 1815-1940  
Britain, 1815-1945  
Japan, 1895-1945  
United States, 1899-1945  
Italy, 1860-1943

<sup>9</sup> The data on these wars, plus the coding rules, are in Singer, Small, and Kraft (1965) and should be available in published form in late 1966.

<sup>10</sup> Since our data represent a complete universe rather than a sub-sample thereof, some might quarrel with our use of the notion of 'statistical significance'. In that case, it could be assumed that the  $r$  value which satisfies the .01 criterion is the threshold below which our correlations may be thought of as too weak to be taken seriously.

#### REFERENCES

- [1] ALBERTINI, LUIGI. *The Origins of the War of 1914*. Trans. by Isabella Massey. Vol. I. (London: Oxford University Press, 1952)
- [2] ALBRECHT-CARRIÉ, RENÉ. *A Diplomatic History of Europe Since The Congress of Vienna*. (New York: Harper, 1958)
- [3] ANDERSON, EUGENE N. *The First Moroccan Crisis 1904-1906*. (Chicago: University of Chicago Press, 1930)
- [4] ARTZ, FREDERICK B. *Reaction and Revolution 1814-1832*. (New York: Harpers, 1934)
- [5] BARLOW, IMA CHRISTINA. *The Agadir Crisis*. (Chapel Hill: University of North Carolina Press, 1940)
- [6] BARTLETT, RUHL J. *The Record of American Diplomacy*. (New York: Knopf, 1956)
- [7] BECKER, JERONIMO. *Historia de Las Relaciones Exteriores de Espana*. Vol. III. (Madrid: J. Rates, 1926)
- [8] BELOFF, MAX. *The Foreign Policy of Soviet Russia 1929-1941*. 2 Vols. (London: Oxford University Press, 1947)
- [9] BOURQUIN, MAURICE. *Histoire De La Sainte Alliance*. (Geneva: Georg, 1954)
- [10] BRANDENBURG, ERICH (Ed.). *Die Auswärtige Politik Preussens 1858-1871*. Vol. III. (Oldenburg: Stalling, 1942)

- [11] — *From Bismarck to World War: A History of German Foreign Policy, 1870–1914*. Trans. by Annie Elizabeth Adams. (London: Oxford University Press, 1933)
- [12] CAVOUR, CAMILLO. *Il Carteggio Cavour-Nigra dal 1858 al 1861*. Vol. I. (Bologna: Zamchelli, 1926)
- [13] COOLIDGE, ARCHIBALD C. *Origins of the Triple Alliance*. (New York: Scribners, 1917)
- [14] CROCE, BENEDETTO. *A History of Italy 1871–1915*. Trans. by Cecilia Ady. (London: Oxford University Press, 1929)
- [15] DALLIN, DAVID J. *Rise of Russia in Asia*. (New Haven: Yale University Press, 1949)
- [16] DAVIDS, JULES. *America and the World of Our Time*. (New York: Random House, 1960)
- [17] DAWSON, DANIEL. *The Mexican Adventure*. (London: G. Bell and Sons, 1935)
- [18] DRIAULT, EDOUARD and LHERITER, MICHEL. *Histoire Diplomatique de la Grèce de 1821 a Nos Jours*. Vol. 1. (Paris: Université de France, 1925)
- [19] DROSSOS, DEM. J. D. *La Foundation de L'Alliance Balkanique*. (Athens: J. Vartsos, 1929)
- [20] DROZ, JACQUES. *Histoire Diplomatique de 1648 à 1919*. (Paris: Librairie Dalloz, 1959)
- [21] FAY, SIDNEY B. *The Origins of the World War*. 2 Vols. (New York: Macmillan, 1928)
- [22] FEIGL, HERBERT and SCRIVEN, MICHAEL (Eds.). *Foundations of Science and the Concepts of Psychology and Psychoanalysis*. (Minneapolis: University of Minnesota Press, 1956)
- [23] FRANCE. MINISTÈRE DES AFFAIRES ÉTRANGÈRES. *Documents Diplomatiques Français 1871–1914*. 2nd Serie, 1901–1911. Vol. 5, No. 11 (1934).
- [24] FRANGULIS, ANTONIO P. *La Grèce et la Crise Mondiale*. 2 Vols. (Paris: F. Alcan, 1926)
- [25] FRIEDJUNG, HEINRICH. *Österreich von 1848 bis 1860*. (Stuttgart: J. G. Cotta, 1912)
- [26] FRITERS, GERARD M. *Outer Mongolia and Its International Position*. (Baltimore: Johns Hopkins Press, 1949)
- [27] FULLER, JOSEPH VINCENT. *Bismarck's Diplomacy at Its Zenith*. (Cambridge: Harvard University Press, 1922)
- [28] GALVEZ, JUAN IGNACIO. *El Peru Contra Columbia, Ecuador y Chile*. (Santiago: Sociedad Imprentaligrafia Universo, 1919)
- [29] GANTENBEIN, JAMES W. (Ed.). *Documentary Background of World War II, 1931–1941*. (New York: Columbia University Press, 1948)
- [30] — *The Evolution of Our Latin American Policy: A Documentary Record*. (New York: Columbia University Press, 1950)
- [31] *Geschichte des Zweiten Weltkrieges 1939–1945*. (Würzburg: A. G. Ploetz, 1960)
- [32] GESHKOFF, THEODORE I. *Balkan Union: A Road to Peace in Southeastern Europe*. (New York: Columbia University Press, 1940)
- [33] GOOCH, GEORGE PEABODY and TEMPERLY, HAROLD (Eds.). *British Documents on the Origins of the War 1898–1914*. Vols. I and II. (London: Great Britain. Foreign Office, 1927)
- [34] GORIANOV, SERGE. 'The End of the Alliance of the Emperors,' *American Historical Review*. Vol. 23, No. 2 (January 1918), pp. 324–49.
- [35] GOTTSCHALK, LOUIS. *Generalization in the Writing of History*. (Chicago: University of Chicago Press, 1963)
- [36] GREAT BRITAIN. *British Foreign and State Papers*. (London: James Ridgway, H. M. S. O., 1812–1954)
- [37] GREENWOOD, ERNEST. *Experimental Sociology: A Study in Method*. (New York: King's Crown Press, 1945)
- [38] GRISWOLD, A. WHITNEY. *The Far Eastern Policy of the United States*. 2nd ed. (New Haven: Yale University Press, 1962)
- [39] GUESHOFF, IVAN E. *The Balkan League*. Trans. by Constantin C. Mincoff. (London: John Murray, 1915)
- [40] GULICK, EDWARD VOSE. *Europe's Classical Balance of Power*. (Ithaca, New York: Cornell University Press, 1955)
- [41] GUYOT, RAYMOND. *Le Première Entente Cordiale*. (Paris: F. Rieder, 1926)
- [42] HALLBERG, CHARLES W. *Franz-Joseph and Napoleon III 1852–1864: A Study of Austro-French Relations*. (New York: Bookman, 1955)
- [43] HARBOTTLE, THOMAS BENFIELD. *Dictionary of Battles from the Earliest Date to the Present Time*. (London: S. Sonnenschein and Co., 1904)
- [44] HELMREICH, ERNST CHRISTIAN. *The Diplomacy of the Balkan Wars, 1912–1913*. (Cambridge: Harvard University Press, 1938)
- [45] HENDERSON, GAVIN BURNS. *Crimean War Diplomacy and Other Historical Essays*. (Glasgow: Jackson and Son, 1947)
- [46] KAPLAN, ABRAHAM. *The Conduct of Inquiry: Methodology for Behavioral Science*. (San Francisco: Chandler, 1964)

- [47] KAPLAN, MORTON. *System and Process in International Politics*. (New York: Wiley, 1957)
- [48] KENNAN, GEORGE. *Russia and the West Under Lenin and Stalin*. (Boston: Little, Brown, 1960)
- [49] KILIL, ALTEMUR. *Turkey and the World*. (Washington, D. C.: Public Affairs Press, 1959)
- [50] KING, BOLTON. *A History of Italian Unity*. 2 Vols. (London: J. Nisbet, 1899)
- [51] KISSINGER, HENRY A. *A World Restored: Metternich, Castlereagh and the Problems of Peace, 1812–22*. (London: Weidenfeld and Nicolson, 1957)
- [52] KLEIN, FRITZ. *Die Diplomatischen Beziehungen Deutschlands zur Sowjetunion, 1917–1932*. (Berlin: Rutten and Loening, 1952)
- [53] KNAPLUND, PAUL. *Gladstone's Foreign Policy*. (New York: Harper, 1935)
- [54] LAMOUCHE, LEON. *Quinze Ans D'Historie Balkanique, 1904–1908*. (Paris: Payot, 1928)
- [55] LANGER, WILLIAM LEONARD. *European Alliances and Alignments, 1871–1890*. (New York: Knopf, 1931)
- [56] LEAGUE OF NATIONS. *Treaty Series*. (Geneva: 1920–1946)
- [57] LEE, DWIGHT E. *Great Britain and the Cyprus Convention Policy of 1878*. (Cambridge: Harvard University Press, 1934)
- [58] LENCZOWSKI, GEORGE. *The Middle East in World Affairs*. (Ithaca, New York: Cornell University Press, 1952)
- [59] LEWIS, GEOFFREY L. *Turkey*. (New York: Praeger, 1955)
- [60] LISKA, GEORGE. *Nations in Alliance: The Limits of Interdependence*. (Baltimore: Johns Hopkins Press, 1962)
- [61] LIVIAN, MARCEL. *L'Entente Balkanique et L'Après-Guerre Actuelle*. (Paris: Librairie Générale de Droit et de Jurisprudence, 1940)
- [62] LOBANOV-ROSTOVSKY, ANDREI A. *Russia and Europe, 1825–1878*. (Ann Arbor, Michigan: Wahr, 1954)
- [63] MACARTNEY, MAXWELL H. H. and CREMONA, PAUL. *Italy's Foreign and Colonial Policy, 1914–1937*. (London: Oxford University Press, 1938)
- [64] MARRIOT, JOHN ARTHUR. *The Eastern Question: An Historical Study in European Diplomacy*. (Oxford: Clarendon Press, 1917)
- [65] MARTENS, FEDOR F. (Ed.). *Recueil des Traités et Conventions Conclus par la Russie avec les Puissances Etrangères*. Vol. 4. 1815–1849. Part 1. (St. Petersburg: A. Bohnke, 1878)
- [66] MILLER, JANE K. *Belgian Foreign Policy Between Two Wars 1919–1940*. (New York: Bookman, 1951)
- [67] MORSE, HOSEA BALLOU. *The International Relations of the Chinese Empire*. Vol. III. (London: Longmans, 1918)
- [68] MOSELY, PHILIP E. *Russian Diplomacy and the Opening of the Eastern Question in 1838 and 1839*. (Cambridge: Harvard University Press, 1934)
- [69] MOUSSET, ALBERT. *L'Espagne Dans La Politique Mondiale*. (Paris: Bossard, 1923)
- [70] NAGEL, ERNEST. 'Determinism in History,' *Philosophy and Phenomenological Research* Vol. 20, No. 3. (March 1960), pp. 291–317.
- [71] NAROLL, RAOUL. *Data Quality Control, A New Research Technique*. (New York: Free Press of Glencoe, 1962)
- [72] NINTCHITCH, MUMTCHILO. *La Crise Bosniaque et Les Puissances Européennes, 1908–1909*. (Paris: Alfred Costes, 1937)
- [73] PENSON, LILLIAN. 'The New Course in British Foreign Policy 1892–1902,' *Transactions of the Royal Historical Society*. 4th Series. Vol. 25 (1943), pp. 121–138.
- [74] PHILLIPS, WALTER ALISON. *The Confederation of Europe: A Study of the European Alliance, 1813–1823*. (London: Longmans, 1920)
- [75] PIRENNE, JACQUES HENRI. *La Sainte-Alliance: Organization Européenne de la Paix Moderne*. 2 Vols. (Neuchatel: Baconniere, 1949)
- [76] PRIBRAM, ALFRED FRANCIS. *The Secret Treaties of Austria-Hungary, 1879–1914*. Trans. by Denys P. Myers and J. G. D'Arcy. 2 Vols. (Cambridge: Harvard University Press, 1920)
- [77] PRICE, ERNEST BATSON. *The Russo-Japanese Treaties of 1907–1916 Concerning Manchuria and Mongolia*. (Baltimore: Johns Hopkins Press, 1933)
- [78] PROTITCH, STOJAN. 'The Secret Treaty Between Serbia and Austria-Hungary,' *Fortnightly Review*. Vol. XCL, (May 1, 1909), pp. 838–49.
- [79] PURYEAR, VERNON JOHN. *England, Russia and the Straits Question, 1844–1856*. (Berkeley: University of California Press, 1931)
- [80] — *International Economics and Diplomacy in the Near East*. (Palo Alto: Stanford University Press, 1935)

- [81] RENOUVIN, PIERRE. *The Immediate Origins of the War*. Trans. by T. C. Hume. (New Haven: Yale University Press, 1928)
- [82] — *Les Relations Entre L'Allemagne, L' Autriche-Hongrie et la Russia de 1871 à 1890*. (Paris: Centre de Documentation Universitaire, 1954)
- [83] ROCKHILL, WILLIAM W. (Ed.). *Treaties and Conventions with or Concerning China and Korea, 1894–1904*. (Washington D. C.: Government Printing Office, 1904)
- [84] ROSECRANCE, RICHARD. *Action and Reaction in World Politics*. (Boston: Little, Brown, 1963)
- [85] RUPP, GEORGE HOOVER. *A Wavering Friendship; Russia and Austria, 1876–1878*. (Cambridge: Harvard University Press, 1941)
- [86] SCHMITT, BERNADOTTE. *Coming of the War 1914*. 2 Vols. (New York: Scribners, 1930)
- [87] — *The Annexation of Bosnia, 1908–1909*. (Cambridge: Cambridge University Press, 1937)
- [88] SETON-WATSON, HUGH. *The Decline of Imperial Russia, 1855–1914*. (London: Methuen and Co., 1952)
- [89] — *Eastern Europe Between the Wars, 1918–1941*. 2nd edition. (Hamden, Conn: Archon, 1962)
- [90] SETON-WATSON, ROBERT WILLIAM. *Disraeli, Gladstone and the Eastern Question*. (London: Frank Cass and Co., 1935)
- [91] — *Britain in Europe 1789–1914: A Survey of Foreign Policy*. (Cambridge: Cambridge University Press, 1938)
- [92] SINGER, J. DAVID, SMALL, MELVIN and KRAFT, GEORGE L. JR. 'The Frequency, Magnitude and Severity of International War 1815–1945,' M. H. R. I. Preprint 159. July 1965.
- [93] SINGER, J. DAVID and SMALL, MELVIN. 'The Composition and Status Ordering of the International System, 1815–1940,' *World Politics*, Vol. XVIII (January 1966a), pp. 236–82.
- [94] — 'Alliance Aggregation and the Onset of War, 1815–1945,' in J. D. Singer (Ed.), *Quantitative International Politics*. (New York: Free Press – Macmillan, 1966b)
- [95] SLUSSER, ROBERT M. and TRISKA, JAN F. *A Calendar of Soviet Treaties, 1917–1957*. (Stanford: Stanford University Press, 1959)
- [96] STEEFEL, LAWRENCE D. *The Schleswig-Holstein Question*. (Cambridge: Harvard University Press, 1932)
- [97] TAYLOR, A. J. P. *The Struggle for Mastery in Europe, 1848–1918*. (Oxford: Clarendon Press, 1954)
- [98] TEMPERLY, HAROLD W. V. *England and the Near East: The Crimea*. (London: Longmans, 1936)
- [99] TRIEPEL, HEINRICH (Ed.). *Nouveau Recueil General de Traites*. 3rd Serie. Vol. 30. (Leipzig: T. Weicher, 1935)
- [100] UNITED STATES STATE DEPARTMENT. *Foreign Relations of the United States, 1908*. (Washington, D. C.: Government Printing Office, 1909)
- [101] VILLARI, LUIGI. *Italian Foreign Policy under Mussolini*. (New York: Devin-Adair, 1956)
- [102] VONRACEK, FELIX JOHN. *Foreign Policy of Czechoslovakia, 1918–1935*. (New York: Columbia University Press, 1937)
- [103] WARD, SIR ADOLPHUS WILLIAM and GOOCH, GEORGE PEABODY (Eds.). *Cambridge History of British Foreign Policy, 1783–1919*. Vol. II, 1815–1866. (Cambridge: Cambridge University Press, 1923.)
- [104] WEBSTER, CHARLES K. 'Palmerston, Metternich and the European System 1830–1841,' *Proceedings of the British Academy*. Vol. 20 (1934), pp. 125–58.
- [105] — *The Foreign Policy of Palmerston, 1830–1841*. 2 Vols. (London: G. Bell and Sons, 1951)
- [106] WHEELER-BENNETT, JOHN W. *Munich: Prologue to Tragedy*. (New York: Duell, Sloan and Pearce, 1948)
- [107] WISKEMANN, ELIZABETH. *The Rome-Berlin Axis*. (London: Oxford University Press, 1949)
- [108] WULLUS, ARMAND. *La Belgique et La Crise Européene, 1914–1943*. (Paris: Berger-Levrault, 1944)

## S U M M A R Y

Although students of world politics have come increasingly to speak of their empirical domain as a social system, little effort has gone into the systematic observation and measurement of its formal or informal structure. One structural attribute of the international system which leaves a definite trace and is therefore readily measurable, is that of alliance patterns. This paper examines all written (peacetime only) alliances among