FORMAL ALLIANCES, 1816-1965:
AN EXTENSION OF THE BASIC DATA*

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In an earlier number of this *Journal*, we published our findings on the distribution of formal alliances among the members of the interstate system during the period between the Napoleonic Wars and World War II. Our purpose there was to present a systematic and quantitative description of all formal alliances, their membership, duration, and type, as well as the procedures we used in generating those data (Singer and Small, 1966b). While our major motivation was to provide the empirical basis for a number of inquiries into the correlates of war during that 125 years, it also seemed likely that these data might be of use to others in the scholarly community.[1]

Since completing the original paper, however, we have been under some compulsion to extend our data beyond World War II and up to the quite recent past, so that the period on which we concentrate is now the 150 years from 1 January 1816 to 31 December 1965. Some of the pressure has been self-induced and some has come via encouragement from the increasing number of scholars who are now engaged in data-based, quantitative research in international politics.[2] At the outset, we had planned to restrict the entire project to the 1816–1945 period, but for a variety of scientific as well as policy reasons we later decided to extend it up through the mid-1960's. Given this set of considerations, it now seems appropriate to up-date the earlier study and make our findings available

to others whose work embraces the two decades following Hiroshima and Nagasaki.[3]

While much of the theoretical and methodological discussion found in the earlier paper need not be repeated here, some of the latter problems are sufficiently different to merit brief attention; this is particularly true of our data sources and their reliability, to which we will address ourselves at the outset. Following that, we will identify and justify the composition of the post–1945 interstate system and its major power sub-system, describe the three classes of alliance with which we are concerned, outline the coding and measuring procedures, and then present our results in a variety of forms. Throughout, we will compare our procedures and results with those of the original study and note any deviations therefrom; those who utilize these data are urged to note such deviations, especially as summarized in the Appendix.

The sources of information

For a great deal of diplomatic information, one may readily turn to the diplomatic archives of many national governments and to the published volumes which subsequently embrace and codify a large portion of those archives. But this only holds true for materials which are at least two (and often, more) decades in the past; few, if any, governments make such documents available until twenty or more years after the fact. For

the earlier study, then, we had the documentary evidence to make us quite confident that all relevant alliances had indeed been identified. But for the more recent years, it looked as if we might be in somewhat the same situation as was the Wilhelmstrasse in 1910; it was known for example, that some sort of undertaking existed between France and Britain, but the German Foreign Office could not be at all certain what the specific commitments were. Similarly today, Western scholars know that the U.S.S.R. and North Vietnam enjoy some sort of fraternal relationship, for instance, but cannot ascertain whether a formal alliance was contracted, no less ascertain the nature of the obligations involved. And even if we know that a formal alliance does exist, and have identified it, we still may wonder whether there are secret provisions which significantly alter the publicly stated arrangements, and which may not become known until the archives are eventually opened.

The picture is not, however, quite as bleak as it might appear. First of all, in the period since World War I, and even more since World War II, the League and the United Nations have maintained a registry wherein all treaties, conventions, and agreements may be recorded by the signatory governments. While registration is not compulsory, the consensus is that a very large percentage of all post–1945 agreements have been deposited with the Secretariat.[4] This gives us, at the least, a single and comprehensive source with which to begin. Second, with the many changes in the culture of diplomacy, its increasing visibility, and the heightened role of ideological appeals and propaganda moves, governments are less and less prone to undertake secret commitments. Third, and closely related, the initiators of most of the alliances of the past two decades have been eager to present them – both for domestic and foreign consumption – as strictly defensive moves, undertaken reluctantly in the face of potential aggression. Fourth, in light of the consequences of America's failure to make explicit its commitments to South Korea before June of 1950, there has since been a strong desire to reduce the ambiguities and uncertainties; secrecy would not be useful in such a context. Finally, as the material which follows will make abundantly clear, it is nearly impossible to think of any alliances that have not already been consummated – and publicized. In every part of the world, just about any alliance that one could reasonably expect to be made since 1945 *has* been made.

Thus, despite the unavailability of the standard archival sources, we are persuaded that the present compilation includes virtually every single alliance which satisfies the criteria which are described below. In addition to the United Nations *Treaty Series* and the League of Nations *Treaty Series*, we have turned to the governmental and secondary sources cited in Table 3 and in the References for the texts of the sixty-two qualifying alliances extant during the post-World War II period.[5]

Membership in the system
It may be recalled that in the earlier paper we differentiated between the total interstate system and its more restricted sub–systems: that comprising most of the European and a few of the most important non-European states (which we called the central system), and that comprising the major powers only. Those states which did not qualify for inclusion in the central system were assigned to the peripheral system. The central peripheral distinction might have been quite justified during the period 1816–1919, but by the end of World War I, most of the independent nations of the world were sufficiently interde-

pendent, and the primacy of Europe was sufficiently ambiguous to permit the termination of that distinction as of 1920.[6] In this paper, therefore, the only two types of nations are those which qualify for the interstate system, and those five which comprise the major power subsystem after 1945.

The justification and a detailed description of our coding procedures will be found in Singer and Small (1966a) and Russett, Singer, and Small (1968), but they may be summarized here. Essentially any putatively sovereign state with a population of at least 500,000 was included, provided that it enjoyed the *de facto* diplomatic recognition of the two 'legitimizers', France and Britain. This latter requirement was only used up through 1919, and since then the basic criterion has been either: (a) membership in the League or the United Nations, or (b) a population of 500,000 or more and recognition by any two major powers.[7] Because the 1816–1945 period was marked by the consolidation and redistribution of empires and by many major wars, the composition of the interstate system underwent frequent shifts. The post–1945 system, on the other hand, shows greater stability. While we do see an appreciable upsurge in system size due to the 'liquidation of colonialism', the only other change is the disappearance of two members. One case is that of Syria, which 'federated' with Egypt to become a part of the United Arab Republic from 1958 to 1961, and the other is Zanzibar, which achieved independence in 1963 but which joined with Tanganyika to form Tanzania in 1964.

As to the major powers – whom we must identify in order to treat their alliance patterns separately later on in the paper – the problem is more complicated in the recent past than it was earlier. There would seem to be two sets of criteria here, regardless of time period; one

is the judgment and consensus of the historians who specialize in the diplomacy of the period, and who, in turn, largely reflect the consensus of the practitioners. The other might be more objective criteria, such as military power, industrial capability, or diplomatic status.

Fortunately enough, both sets of criteria produce essentially the same set of nations. Thus, for most of the nineteenth and that part of the twentieth century embraced in the Correlates of War project, we find that those states which score at or very near the top in military–industrial capability and diplomatic status are the same ones assigned to the major power category by those whose research focuses on the several epochs and regions involved.[8] Out of this consensus comes the following. Going back to the pre-World War I decades, we included: England, France, Germany, Austria–Hungary, Italy, Russia, Japan, and the United States. When the debris and chaos of that war were cleared away (by the mid-1920's) the Hapsburgs were gone, but the other seven remained in (or had returned to) the ranks of the major powers. In the wake of World War II, the ranks were further reduced, leaving in 1946 only the U.S.S.R. and the United States plus England and France; and with the consolidation of the Communist revolution and their creditable showing in the Korean War, China entered this oligarchy for the first time. By 1950, then, the major powers were exactly those nations which had been assigned special status (via the veto power) in the United Nations Security Council, and which would soon also become the five nuclear powers.

Having summarized our criteria and line of reasoning, we can now turn to the system membership compilations which emerged. In Table 1, then, we list those states which comprised the total interstate system during all or part of the pe-

riod 1946–65. They are listed by regional location with their standardized code numbers to the left and their date of entry into the system shown to the right; if their qualification for membership pre-ceded 1946, no date is shown, and if they did not remain in the system for the entire twenty years (Syria and Zanzibar) the dates of departure and/or return are shown as well.[9]

Table 1. *Membership in the Interstate System, 1946–65*

WESTERN HEMISPHERE (002–199)		EUROPE (200–399) *Cont.*	
002	United States	350	Greece
020	Canada	352	Cyprus 1960
040	Cuba	355	Bulgaria
041	Haiti	360	Rumania
042	Dominican Republic	365	Russia
051	Jamaica 1962	375	Finland
052	Trinidad and Tobago 1962	380	Sweden
070	Mexico	385	Norway
090	Guatemala	390	Denmark
091	Honduras	395	Iceland
092	El Salvador		
093	Nicaragua	**AFRICA (400–599)**	
094	Costa Rica		
095	Panama	420	Gambia 1965
100	Colombia	432	Mali 1960
101	Venezuela	433	Senegal 1960
130	Ecuador	434	Dahomey 1960
135	Peru	435	Mauritania 1960
140	Brazil	436	Niger 1960
145	Bolivia	437	Ivory Coast 1960
150	Paraguay	438	Guinea 1958
155	Chile	439	Upper Volta 1960
160	Argentina	450	Liberia
165	Uruguay	451	Sierra Leone 1961
		452	Ghana 1957
EUROPE (200–399)		461	Togo 1960
		471	Cameroon 1960
200	England	475	Nigeria 1960
205	Ireland	481	Gabon 1960
210	Netherlands	482	Central African Republic 1960
211	Belgium	483	Chad 1960
212	Luxembourg	484	Congo (Brazzaville) 1960
220	France	490	Congo (Kinshasa) 1960
225	Switzerland	500	Uganda 1962
230	Spain	501	Kenya 1963
235	Portugal	510	Tanzania 1961
255	German Federal Republic 1955	511	Zanzibar 1963–64
265	German Democratic Republic 1954	516	Burundi 1962
290	Poland	517	Rwanda 1962
305	Austria 1955	520	Somalia 1960
310	Hungary	530	Ethiopia
315	Czechoslovakia	551	Zambia 1964
325	Italy	553	Malawi 1964
338	Malta 1964	560	South Africa
339	Albania	580	Malagasy 1960
345	Yugoslavia		

Table 1. *Membership in the Interstate System, 1946-65* (cont.)

MIDDLE EAST (600–699)	ASIA 700-999 *Cont.*
600 Morocco	713 Taiwan 1949
615 Algeria 1962	731 People's Democratic Republic of
616 Tunisia 1956	Korea 1948
620 Libya 1952	732 Republic of Korea 1949
625 Sudan 1956	740 Japan 1952
630 Iran	750 India 1947
640 Turkey	770 Pakistan 1947
645 Iraq	775 Burma 1948
650 United Arab Republic (Egypt)	780 Ceylon 1948
652 Syria 1946–58, 1962	781 Maldive Islands 1965
660 Lebanon 1946	790 Nepal
663 Jordan 1946	800 Thailand
666 Israel 1948	811 Cambodia 1953
670 Saudi Arabia	812 Laos 1954
678 Yemen	816 Democratic Republic of Vietnam 1954
690 Kuwait 1961	817 Republic of Vietnam 1954
	820 Malaysia 1947
ASIA (700–999)	830 Singapore 1945
	840 Philippines 1946
700 Afghanistan	850 Indonesia 1949
710 China	900 Australia
712 Mongolia	920 New Zealand

Coding the alliances

With the spatial–temporal domain identified, we can now turn to the alliances entered into by the members of the defined system during the twenty years under study, or carried over from prior years. It may be recalled that we defined three different classes of alliance in the original study: defense pacts, neutrality and non-aggression pacts, and ententes, with the following distinguishing characteristics. In the defense pact (Class I), the signatories obligated themselves to intervene militarily on behalf of one another if either were attacked. In the neutrality pact (Class II), the commitment was to remain militarily neutral if the partner were attacked. And in the entente (Class III), the only obligation was to consult with, or cooperate, in such a military contingency. Treaties of friendship, etc. (which we do *not* include) merely involve a more general promise of mutual cordiality.[10]

The treaty obligations were ascertained by a literal reading of the texts, supplemented (if there were any verbal ambiguities) by the interpretations of the diplomatic historians. In other words, the classification is not sensitive to the political relations of the governments involved, nor to interpretations made by other governments. Second, no indirect alliance obligations were inferred via overlapping memberships. That is, even if nation B was allied with both A and C via separate treaties, A and C were not treated as allies unless they were both also signatories to the same treaty of alliance. Third, a variety of more general commitments were not classified as alliances. Among those *excluded* were: (a) charters of global or quasi-global international organizations, such as the League, the United Nations, or their specialized agencies; (b) treaties of guarantee to which all relevant parties registered their assent, such as the 1960 Greek-

Turkish guarantee of Cyprus; (c) conventions or agreements setting out general rules of state behavior, such as the Geneva Conventions; (d) 'mutual security' arrangements which involve bases, financial aid, and training programs exclusively, such as the Spanish–American Treaty; (e) unilateral and asymmetric guarantees, such as the 1951 Japanese–American security treaty, in which only one signatory is committed to defend the other. On the latter rule, we must reiterate that we are concerned exclusively with the commitments and resultant cross-pressures which bind two or more states to concert their policies in time of crisis. An alliance, in other words, must contain at least two member states. Without this distinction, any pronouncement which declared that one nation would protect the territory of another nation would have to be considered as an alliance. For example, in 1951, Egypt denounced her 1936 alliance with England, but England refused to accept this unfriendly gesture and maintained that the alliance was still in force. Obviously, after 1951, the 1936 alliance became a unilateral (and unwanted) guarantee of the territory of Egypt by England, signifying something quite different from reciprocal obligation and cooperation.

Let us shift now from the *nature* of the alliance commitments which concern us here to the problem of identifying the *span of time* during which they are in force. In this connection, a preliminary point is in order, clarifying the connection between the data presented here and those shown in the original paper. Our major purpose in gathering alliance data is to ascertain the extent to which the resulting clusters and configurations correlate with the onset of war in the years following each set of observations of such alliance distributions. We have, therefore – and those who use our data for

other purposes should take careful note – *not* included any alliances which were consummated by nations while participating in war or within three months prior to such participation, unless those alliances emerged from the war intact. Likewise, *no* alliances consummated during either of the World Wars were included unless they, too, continued in force during the post-war period.[11] One effect of this particular coding rule is to make it unnecessary for us to cover the 1914–18 and 1939–45 periods, and this is what accounts for the gap between the dates in the original paper and those used here.

Turning, then, to the effective dates of any alliance, the beginning date was a relatively simple matter. Even though some months may pass between the necessary signatures and ratification, the former date is always used; if, however, the treaty failed of ratification (such as EDC) it is of course not included at all. As to termination dates, the problem – especially in more recent years – is more complex. That is, with the decreasing incidence of formal (or even informal) abrogations or denunciations of alliances, the termination of a treaty whose text does not specify an expiration date can become difficult to pin-point. Thus, we have in several cases had to make a political judgment as to the year in which the obligations were no longer effectively binding on one, several, or all of the signatories. A good example might be Yugoslavia's leaving the Cominform in 1948. Even though not all of the states which had joined in the Soviet bloc's alliance system (via the several bilateral treaties of 1945 and 1946) formally abrogated their commitments, it seems evident that neither the Yugoslav nor the other governments considered themselves bound after the Tito regime's expulsion. So that the user will know the basic reason for the termination dates assigned

Table 2. *Alliances which terminated during 1946–65*

Signatories & Effective Date	Termination Date	Justification
England–Iraq 1930	1956	English invasion of Suez
England–Egypt 1936	1951	Unilateral abrogation by Egypt
England–Russia 1942	1947	Onset of Cold War
France–Russia 1944	1947	Onset of Cold War
China–Russia 1945	1947	Russian support of Communist insurgents
England–Jordan 1946	1957	Unilateral abrogation by Jordan
Yugoslavia–Soviet Bloc 1945–47	1948	Yugoslavia leaves Cominform
Cuba–OAS 1947	1960	American–Cuban hostility followed by expulsion from OAS
China–Russia 1950	1961	Sino–Soviet split
Iraq–CENTO 1954	1958	Change in Iraqi government
Albania–Warsaw Pact 1955	1961	Sino–Soviet split

to those twelve of the sixty-nine qualifying alliances which did become, in our judgment, ineffective during the 1946–65 period, we indicate them briefly in Table 2.

Another problem of a chronological nature is that of new alliance agreements which are undertaken between and among governments which were already allied. The question here is one of determining which commitment takes precedence, since we are concerned not merely with *whether* or not certain states are allied, but ascertaining the nature or class of that commitment. We begin with the assumption that – in terms of the obligations undertaken – a defense pact imposes greater commitments than a neutrality or non-aggression pact, and that each of these imposes a greater commitment than an entente. Therefore, whenever any two or more signatories to a treaty with lower level obligations subsequently join in one with greater obligations – and this says nothing about the probability of such obligations being fulfilled – the latter takes precedence and the former is no longer included for computational purposes. Conversely, if an entente were consummated between or among states which were already members of a defense pact, for example, the

entente would not be included in our compilations, even though it followed the defense pact in the chronological sense.

A final question arises from cases in which a number of bilateral treaties of a given class and national membership is followed (or preceded) by a multilateral one of the same class and membership. In such cases, the multilateral alliance takes priority and the bilateral ones are dropped from our computations. Typical of these would be the post-World War II bilateral arrangements which were superseded by the Warsaw and NATO pacts. It should be stressed here that these coding rules are not meant to imply that the superseded alliance is considered to be terminated and no longer in effect. They serve only to make our indicators of alliance aggregation and alliance commitment, as discussed below, more consonant with the empirical realities which they are meant to measure, and hence more valid.

The results of these coding procedures and classification criteria are shown in Table 3. In addition to the names of the signatory states, we show the dates of inception and termination, the alliance class (defense, neutrality, or entente) and the place in which its text may most conveniently be found.

Table 3. *Interstate Alliances in Force, 1946–65*

Signatory States	Date of Inception	Last Year in Force	Alliance Class	Information Source
England Portugal	10/99	1949*	1	BD, p. 93
Afghanistan Russia	8/26		2	L 157, p. 371
England Iraq	1932	1956	1	BFS 132, p. 280
Mongolia Russia	3/36		1	U 48, p. 177
England Egypt	10/36	1951	1	BFS 140, p. 179
Brazil Bolivia Chile Colombià Costa Rica Cubà Dominicàn Republic Ecuador El Salvàdor Guatemala Haiti Honduràs Mexico Nicaragua Panama Paràguày Peru United States Uruguay Venezuela Argentina	12/26	1947* (1942)	3	Gàntenbein, p. 772
Afghanistan Iraq Iran Turkey	9/37		2	L 190, p. 21
Portugal Spain	3/39		2	BFS 142, p. 673
Canada United States	8/40	1949*	3	DSB 3, p. 154; DSB 16, p. 361

NOTES

[1]   Classes of Alliance are : 1–Defense Pact; 2–Neutrality or Non-Aggression Pact; 3–Entente.
[2]   Asterisk (*) following termination date indicates that the alliance was superseded by another arrangement.
[3]   Parentheses around a year indicate that it applies only to the state alongside which it appears.

Table 3. (*cont.*)

Signatory States	Date of Inception	Last Year in Force	Alliance Class	Information Source
England Russia	5/42	1947	1	BFS 144, p. 1038
Czechoslovakia Russia	12/43	1955*	1	Benes, p. 255
Australia New Zealand	1/44	1951*	3	U 18, p. 357
France Russia	12/44	1947	1	DSB 12, p. 39
Egypt Iraq Lebanon Saudi Arabia Syria Transjordan Yemen	3/45	1950*	3	U 70, p. 237
Russia Yugoslavia	4/45	1948	1	DSB 12, p. 774
Poland Russia	4/45	1955*	1	U 12, p. 391
China Russia	8/45	1947	1	U 10, p. 300
Poland Yugoslavia	3/46	1948	1	U 1, p. 153
England Jordan	3/46	1957	1	U 6, p. 143
Czechoslovakia Yugoslavia	5/46	1948	1	U 1, p. 67
Albania Yugoslavia	7/46	1948	1	U 1, p. 81
Czechoslovakia Poland	3/47	1955*	1	U 25, p. 231
England France	4/47	1949*	1	U 9, p. 187
Argentina Bolivia Brazil Chile Colombia Costa Rica Cuba Dominican Republic Ecuador El Salvador	8/47 (1960)		1	U 21, p. 77

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Table 3. (*cont.*)

Signatory States	Date of Inception	Last Year in Force	Alliance Class	Information Source
Guatemala Haiti Honduras Mexico Nicaragua Panama Paraguay Peru United States Uruguay Venezuela				
Bulgaria Yugoslavia	11/47	1948	1	SDD no. 4, p. 241
Hungary Yugoslavia	12/47	1948	1	SDD no. 4, p. 243
Albania Bulgaria	12/47	1955*	1	SDD no. 4, p. 243
Rumania Yugoslavia	12/47	1948	1	U 116, p. 89
Hungary Rumania	1/48	1955*	1	U 477, p. 155
Bulgaria Rumania	1/48	1955*	1	SDD no. 4, p. 245
Hungary Russia	2/48	1955*	1	U 48, p. 163
Rumania Russia	2/48	1955*	1	U 48, p. 189
Belgium England France Luxembourg Netherlands	3/48	1949*	1	U 19, p. 51
Bulgaria Russia	3/48	1955*	1	U 48, p. 135
Finland Russia	4/48		1	U 48, p. 149
Bulgaria Czechoslovakia	4/48	1955*	1	SDD no. 4, p. 248
Bulgaria Poland	5/48	1955*	1	U 26, p. 213
Hungary Poland	6/48	1955*	1	U 25, p. 319
Bulgaria Hungary	7/48	1955*	1	U 477, p. 169

Table 3. (*cont.*)

Signatory States	Date of Inception	Last Year in Force	Alliance Class	Information Source
Czechoslovakia Rumania	7/48	1955*	1	SDD no. 12–13, p. 633
Poland Rumania	1/49	1955*	1	U 85, p. 21
Czechoslovakia Hungary	4/49	1955*	1	U 477, p. 183
Belgium Canada Denmark England France Iceland Italy Luxembourg Netherlands Portugal United States Greece Turkey German Fd. Repub.	4/49 (1951) (1951) (1955)		1	U 34, p. 243
China Russia	2/50	1961	1	U 266, p. 3
Egypt Iraq Jordan Lebanon Saudi–Arabia Yemen Syria Libya Sudan Tunisia Morocco Kuwait Algeria	4/50 (1950–58, 1961) (1953) (1956) (1956) (1958) (1961) (1962)		1	Lawson p. 235
Philippines United States	8/51		3	U 177, p. 133
Australia New Zealand United States	9/51		3	U 131, p. 83
Greece Turkey Yugoslavia	2/53	1954*	3	U 167, p. 21
England Libya	7/53		1	U 186, p. 185

Table 3. *(cont.)*

Signatory States	Date of Inception	Last Year in Force	Alliance Class	Information Source
Republic of Korea United States	10/53		3	U 238, p. 199
Pakistan Turkey	8/54	1954*	3	U 211, p. 263
Greece Turkey Yugoslavia	8/54		1	U 211, p. 237
Australia England France New Zealand Pakistan Philippines Thailand United States	9/54		3	U 209, p. 28
Taiwan United States	12/54		3	U 248, p. 226
Turkey Iraq England Pakistan Iran	2/55 (4/55) (9/55) (11/55)	(1958)	3	U 233, p. 199
Bulgaria Czechoslovakia German Democratic Republic Hungary Rumania Russia Albania Poland	5/55	(1961)	1	U 219, p. 3
England Malaysia	10/57		1	U 285, p. 59
Ghana Guinea	5/59	1961*	3	Legum, p. 178
Burma China	1/60		2	DIA, 1960, p. 499
Afghanistan China	8/60		2	DIA, 1960, p. 502
China Guinea	9/60		2	DIA, 1960, p. 337
Ghana Guinea Mali	4/61	1963	1	Legum, p. 178

Table 3. *(cont.)*

Signatory States	Date of Inception	Last Year in Force	Alliance Class	Information Source
North Korea Russia	6/61		1	DIA, 1961, p. 256
China North Korea	7/61		1	DIA, 1961, p. 258
China Ghana	8/61		2	DIA, 1961, p. 646
Cameroon Central African Republic Chad Congo (B) Dahomey Gabon Ivory Coast Malagasy Mauritania Niger Senegal Upper Volta	9/61	1964	1	DIA, 1961. p. 678
Rwanda	(3/63)			
Togo	(7/63)			
Algeria Burundi Cameroon Central African Republic Chad Congo (B) Congo (K) Dahomey Ethiopia Gabon Ghana Guinea Ivory Coast Liberia Libya Malagasy Mali Mauritania Morocco Niger Nigeria Rwanda Senegal Sierra Leone Somalia Sudan Tanzania Togo Tunisia Uganda United Arab Republic	5/63		3	Legum, p. 281

Table 3. *(cont.)*

Signatory States	Date of Inception	Last Year in Force	Alliance Class	Information Source
Upper Volta				
Malawi	(1964)			
Zambia	(1964)			
Gambia	(1965)			
Ethiopia	11/63		1	K, p. 19809
Kenya				
Gambia	(1965)		1	Rice, p. 387
Senegal				

Before turning to the conversion procedures by which these raw data are made more useful for research purposes, it might be helpful to present some simple summaries. The most general summary, found in Table 4, shows the frequency distribution of those alliances which were in force, according to our criteria, among the states which constituted the system during all or part of the twenty years which concern us here. It should be noted that the total number of alliances shown here (80) comes to more than the 69 alliances actually in effect, since several of the multilateral ones link not only major powers with non-majors (minors), but majors with majors, and minors with minors, thus falling into more than one of the rows.

Table 4. *Distribution of Alliances by Class and Signatories, 1946–65*

	1	2	3
Majors with Majors	7	0	1
Majors with Minors	21	5	7
Minors with Minors	27	2	10
Total	55	7	18

If we may be permitted one interpretive comment here, it is worth noting how few neutrality and/or non-aggression pacts are found during these two recent decades. While there were only four such arrangements during the 1816–99 period, accounting for 11 per cent of the nineteenth century alliances, that number rose sharply to 37 (or 48 per cent) during the 1900–39 period. But the number dropped sharply for the post-World War II period, with the seven neutrality pacts accounting for only 9 per cent of all the alliances in force at any time during those twenty years. The non–aggression pact, which is one variation of the traditional neutrality pact, was clearly an invention of the 1920's and 1930's, and if the amount of war which followed is any indication, they were not particularly effective. Given that experience, it is little wonder that only four such alliances were consummated after World War II and all of these involved China; the other three were signed during the heyday of the 'non–aggression' era between the two world wars.

It might also be noted that the percentage of ententes – a modest consultative obligation – remained constant after the ceremonies in Tokyo Bay. Ententes accounted for 23 per cent of the nineteenth century alliances and 22 per cent and 23 per cent respectively, for both twentieth century periods; the latter figures somewhat overstate their importance, since all but a few of those since 1945 were consummated among the minor non-Western states. Be that as it may, given the very low frequency of the class II (non-aggression) alliances, we have,

for the aggregate computational purposes outlined in the next section, combined them with those of class III.

An alternate way of summarizing the data is to shift from the number of alliances (and alliance bonds) to the number of national alliance commitments, counting each individual nation-to-nation commitment. Applying the formula $n(n-1)$ to the 21-nation Rio Pact, for example, we get 420 national commitments. The frequencies resulting from this set of computations are found in Table 5, as follows:

Table 5. *Distribution of Nation-to-Nation Alliance Commitments by Class and Signatories, 1946–65*

	1	2	3
Majors with Majors......	22	0	6
Majors with Minors	166	10	88
Minors with Minors......	924	14	1620
Total	1112	24	1714

Annual alliance indicators

Returning once more to the presentation of our data, there is the problem to which we alluded earlier: how can the raw alliance figures be converted into a form which is useful for correlational analysis over time? That is, if our concern is to ascertain the extent to which alliance patterns predict to, and correlate with, fluctuations in the incidence of war, or any other types of event, the raw data must be converted into a variety of annual indicators.

As in the original paper, we suggest two different measures of this particular structural attribute of the interstate system. One, called Alliance Aggregation, reflects the percentage of states of a given type which belong to one or more alliances of any given class in each successive year. The other, called Alliance Commitment, is a bit more complex, and reflects the number of nation-to-nation commitments per system member for each year.[12]

In addition to the computation procedures, there are two specific coding rules worth reiterating. First, any pair of states may have more than one alliance commitment in force at any given time. But, second, we only count the strongest or most dominant bond which any state has vis-à-vis any other. Defense pacts take precedence over neutrality pacts, and these take precedence over ententes, and if A is in both a defense pact and an entente with B, the latter bond is not included in the computation. To illustrate, then, if the Alliance Commitment Indicator (ACI) for a given year is 7.12 (as in 1946 for all classes of commitments among all states in the system) there was an average of 7.12 alliance commitments per state; a figure of 1.00 indicates an average of one such commitment per state, but tells us of course nothing about the concentration or dispersion of such commitments.[13] One virtue of both sets of indicators is that they are normalized for system size, thus permitting comparisons across time.

Table 6, then, is divided into two parts, with the Alliance Aggregation scores on the left and the Alliance Commitment scores on the right. After showing, for each of the twenty years, the number of states in the system and the number in the major power sub-system, we present four separate indicators of Alliance Aggregation: the percentage of the system's members who are in one or more alliances of *any* class; the percentage in *defense* pacts only; the percentage of *major* powers in any alliance; and the percentage of majors in defense pacts only. On the right hand side, under Alliance Commitment, we show the following ratios between the number of national commitments and the system or sub-system size: the number of commitments of *any* class per member of the total system; number of *defense* pact commitments of any class by *major* powers (regardless of partner's

Table 6. Annual Alliance Indicators, 1946-65

	Alliance Aggregation							Alliance Commitment			
Year	System Size	No. of majors	% in any class	% in defense pacts	% majors in any class	% majors in defense pacts	Year	ACI in any class	ACI in defense pacts	ACI of majors in any	ACI of majors in defense
1946	66	4	67	20	100	75	1946	7.12	0.42	8.5	3.25
1947	68	4	71	54	100	100	1947	13.26	6.76	14.0	8.75
1948	72	4	71	56	100	100	1948	7.75	6.81	11.0	10.50
1949	75	5	71	57	80	80	1949	8.77	7.95	14.2	13.80
1950	75	5	72	64	100	100	1950	8.75	8.21	12.6	12.40
1951	75	5	75	67	100	100	1951	9.17	8.53	14.6	13.80
1952	77	5	73	65	100	100	1952	8.88	8.57	14.2	13.40
1953	78	5	76	65	100	100	1953	9.00	8.62	14.6	13.80
1954	82	5	76	63	100	100	1954	9.34	8.27	18.8	13.80
1955	84	5	76	64	100	100	1955	10.33	9.11	21.6	15.60
1956	87	5	76	64	100	100	1956	10.00	8.83	20.6	14.80
1957	89	5	75	64	100	100	1957	9.78	8.63	20.6	14.80
1958	90	5	76	64	100	100	1958	9.87	8.73	20.4	14.60
1959	89	5	78	64	100	100	1959	9.69	8.61	20.2	14.60
1960	107	5	65	53	100	100	1960	8.11	7.16	20.8	14.60
1961	111	5	77	67	100	100	1961	9.21	8.20	21.4	14.80
1962	117	5	73	63	100	100	1962	8.79	7.85	20.8	14.20
1963	119	5	81	66	100	100	1963	17.41	8.15	20.8	14.20
1964	122	5	80	61	100	100	1964	18.00	7.90	20.8	14.20
1965	124	5	81	51	100	100	1965	16.81	6.32	20.8	14.20

status) per major; and number of major power defense pact commitments per major.

Having computed these ten indicators for each of the twenty years, we and others may next wonder as to their utility for analytical purposes. As independent, intervening, or dependent variables, we may find one or more of these several measures useful, depending on the systemic focus and theoretical inquiry at hand. But for more general purposes, it might be useful to have either a single combined index, or to select one of the indices as generally representative. The first could be generated by a variety of techniques, among which the 'construct mapping' version of factor analysis (Jones, 1966) would seem particularly appropriate. We do not offer such combined measures here, but do suggest a basis for the second strategy. That is, if we find that the scores of all or most of the separate measures show a high correlation vis-à-vis one another, one may then be justified in using any one of them for certain purposes. Whereas the picture for much of the 1816–1939 period was a rather confusing and erratic one, the post-World War II pattern is remarkably clear. Even a cursory visual inspection of Table 6 reveals that any rank-order correlation would be extremely high; whether one compares across alliance classes, nation types, or alternative indices, the years would fall into essentially the same ranking. Likewise, if we treated our data in interval scale fashion, any of the appropriate correlation coefficients would turn out to be remarkably high. Thus we do not include here any of the correlation matrices which were quite necessary in the earlier paper.

Summary and speculation

In this final section we want to compare the period under review here with that embraced in the original inquiry, but be-

fore doing so, it might be useful to summarize (verbally and statistically) the alliance patterns of this more recent period by itself. The post-World War II scene divides rather naturally into three sub-periods. The first of these, extending up through 1951, saw not only the liquidation of the most severe war in human history and the establishment of a collective security system which might prevent another such holocaust, but the creation of an unprecedented number of alliances. While such 'collective defense' treaties were explicitly permitted by the United Nations Charter, the speed with which they were formed could only cast doubt on the expressions of confidence which accompanied the birth of the world organization. By 1947, 71 per cent of the nations in the interstate system were in one or more alliances of one class or another, and 54 per cent of them were in the more concrete defense pacts; moreover, by the next year, 100 per cent of the major powers were already committed to defense pacts, and when this flurry of alliance-making came to an end in 1951, three-quarters of all the system's members were allied, as were *all* of the major powers.

The second period, extending from 1951 through 1959, was exceptionally stable in terms of alliance aggregation and alliance commitment scores, with no appreciable movement into, out of, or between, alliance blocs, even though the size of the system rose from 75 to 89. This is not to say, however, that no new treaties of alliance were consummated. That decade saw the establishment of CENTO, SEATO, and the Warsaw Pact, and these certainly helped to further institutionalize the cold war cleavage. On the other hand, most of the alliance bonds represented in these three defense pacts had already been established, albeit sometimes at the entente level, via prior bilateral treaties. Hence – and this

is precisely why our measures do not suffice for all theoretical purposes – there was no appreciable increase in the several indices during the 1950's.

A third period, from 1960 to the close of our study in 1965, was characterized by a momentary decline in both alliance aggregation and alliance commitment scores (largely as a result of the influx of new states) followed by a rapid rise in these indicators to new heights. By 1965, the year we close our study, 81 per cent of the states in the system were allied, and the Alliance Commitment Indicator showed an average of 16.8 alliances for every member in the system. During the seven years from 1959 to 1965 the system increased in size from 89 to 124, leading to a much larger denominator in our ratio, but the several new alliances (largely African) led to a comparable increase in the numerator.

Turning from the sheer magnitude of our ten different indices of aggregation and commitment, another striking element is the relatively 'natural' as well as stable pattern which developed. That is, once the 'cold war' confrontation became apparent, all but five of the European members of the system,[14] and a good many in the other regions, had cast their lots with either the American or the Soviet bloc. In Asia, two relatively established states – Thailand and the Philippines – joined with two newly independent ones – Pakistan and Malaysia – to link up with SEATO. On top of this, Japan, Taiwan, and South Korea had bilateral commitments with the U.S., which was the major architect of SEATO. On the opposing side, for much of these two decades, the Asian states of China, North Korea, and Mongolia were linked formally to the Soviet Union, while North Vietnam was an informal member of this anti-Western configuration. Equally interesting in this regard is the fact that, aside from two non-aggression

pacts, none of the system members which began the cold war as announced neutrals defected from that position to join the major power blocs. At one point (the Bandung conference of 1955) there was some discussion of an alliance of the nonaligned nations to formalize that state of affairs, but it was not considered necessary enough to justify the costs and obligations which might be involved.[15]

In Latin America, Africa, and the Middle East, likewise, the picture showed little change over these two decades. The former region's members revived their pre-war regional bloc affiliated with the U.S. in the form of the Organization of American States, and only Cuba failed to remain in it during the entire period. In Africa, despite the pro-Soviet inclination of the 'Casablanca group', the Organization of African Unity institutionalized the neutrality (in the cold war context at least) of almost every state in the region. In the north, the Arab League embraced all of the Moslem nations of North Africa and the Middle East. Thus, from the Dardanelles to the Cape, every system member was in one alliance or another, except for Israel and South Africa.[16]

The above patterns, while they held for most of the period under review, do not tell the entire story. As we urged in the earlier paper and elsewhere in this one, formal written alliances offer only one index of the system's basic configurations. A more complete picture of the system at any point in time must certainly take account of political alignments and predispositions which stem from strategic, geographic, economic, and ideological factors. And while all of these factors do exercise some impact on the decisions which lead to formal alliance, they do not all necessarily produce the same alliance configurations.

As a matter of fact, one of the working – but not yet tested – assumptions

of this project is that the peacefulness of the system depends very much on the existence of strong cross-pressures among states, varying as to which sectors of activity and concern are involved. In other words, we posit that high alliance aggregation and commitment scores need not necessarily make the system more war-prone by and of themselves. But if such conditions are accompanied by configurations in which many of the states in the system divide up into two opposing blocs whose composition is constant across a wide range of issues, then we would expect the salutary effects of the 'invisible hand' to be seriously inhibited. With the pluralistic, cross-cutting bonds thus weakened, we hypothesize that war becomes much more probable.[17]

This consideration leads, then, to our concluding comments. We found that high alliance aggregation scores in the nineteenth century did not precede, or predict to, increases in the incidence of war. On the contrary, the most peaceful periods in the 1816-99 period were largely those which were preceded by the highest levels of alliance aggregation and commitment. In the twentieth century, however, quite the reverse obtained, with high alliance levels predicting all too regularly to sharp increases in the frequency, magnitude, and severity of war (Singer & Small, 1968).

One plausible explanation might be that nineteenth century alliances were largely 'affairs of convenience' rather than 'marriages of passion', to reverse the conventional idiom. That is, only as the tradition of quiet diplomacy among culturally similar elites gave way to the welfare state, rising public and partisan involvement in foreign policy, and extensive use of psychological mobilization techniques, did alliance bonds become increasingly inflexible and dysfunctional. Under such conditions, movement into and out of alliances became increasingly inhibited, and what had formerly been thought of as rational diplomacy and *Realpolitik* became a matter of perfidy and condemnation. The question, then, is whether – assuming that this model is an accurate reflection of reality – the slight movement toward a loosening of the cold war alliance bonds in the 1960's will help make ours a more stable system. After all, the only other times in which the alliance indices stood at levels even approximately as high were 1912–14 and 1937–39, and the consequences then were disastrous.

Appendix A. *Substantive Modifications of Original Data*

In any enterprise of this kind, the researcher is bound to discover new or conflicting facts as the project unfolds and as comments come in from others in the field. This has certainly been our experience in the Correlates of War project, and as a consequence, the following substantive modifications in our data have become desirable. First, these dates of qualification for system membership have been changed: Cuba, from 1934 to 1902; Hungary, from 1920 to 1919; Czechoslovakia, from 1919 to 1918; Estonia, Latvia, and Lithuania, from 1920 to 1918, and Yemen, from 1934 to 1926. Second, we are now persuaded that the Anglo-Portuguese defense pact of 1899 should be coded as surviving World War I, and terminating only with the NATO treaty (which supersedes it) rather than in 1914, as originally coded. Third, new evidence suggests that the 1933 treaty between Finland and eight Latin American states did not satisfy our criteria and should not be classified as an alliance in the sense used here; it is therefore excluded from our revised compilation. And last, we had originally ignored a treaty partner, and also overrated the classifi-

cation of the Saudi-Arabian-Yemeni alliance of 1937. It should now be coded as an Iraqi-Saudi entente of 4/36, to which Yemen adhered in 4/37. Those who utilize our data decks will find these modifications already made, but those who are working from the article itself should note the changes.

As a further aid to readers who are interested in alliance patterns since 1816, we offer again our basic listing (with the above modifications) from the original article. Sources and the distinctions between central and total system members have been eliminated for the sake of simplicity.

Table 7. *Inter-Nation Alliances, 1816–1945 with Commitment Class and Dates*

Members	Incept.	Termin.	Class	Members	Incept.	Termin.	Class
Austria	6/1815–1848,	1866	1	Austria	12/1847	1859	1
Baden	1850			Modena			
Bavaria							
Hesse–Electoral				Austria	1851	1859	1
Hesse–Grand Ducal				Parma			
Prussia							
Saxony				France	1/1859	1859	1
Württemberg				Sardinia			
Hanover	1838						
Mecklenburg–Schwerin	1843			Modena	?/1859	1860	1
				Parma			
Austria	11/1815	1823	1	Tuscany			
England							
Prussia				Ecuador	1/1860	1861(?)	1
Russia				Peru			
France	11/1818						
				England	10/1861	1862	3
England	7/1827	1830	3	France			
France				Spain			
Russia							
				Prussia	2/1863	1864	1
Russia	7/1833	1840	1	Russia			
Turkey							
				Colombia	1/1864	1865(?)	1
Austria	10/1833–1848,	1854	3	Ecuador			
Prussia	1850						
Russia				Baden	8/1866	1870	1
				Prussia			
England	4/1834–1840,	1846	1				
France	1841			Prussia	8/1866	1870	1
Portugal				Württemberg			
Spain							
				Bavaria	8/1866	1870	1
Austria	7/1840	1840	1	Prussia			
England							
Prussia				Austria	10/1873	1878	3
Russia				Germany			
Turkey				Russia			
England	6/1844	1846	3	Bolivia	2/1873	1883	1
Russia		(1853?)		Peru			

Table 7. *(cont.)*

Members	Incept.	Termin.	Class	Members	Incept.	Termin.	Class
Austria Russia	1/1877	1878	2	England France	4/1904	1914*	3
England Turkey	6/1878	1880	1	France Spain	10/1904	1918	3
Austria Germany Italy	10/1879 5/1882	1918 (1914)	1	England Spain	5/1907	1918	3
Austria Germany Russia	6/1881	1887	2	France Japan	6/1907	1914*	3
Austria Serbia	6/1881 1889	1889* 1895	2 1	Japan Russia	7/1907	1914*	3
Austria Germany Rumania Italy	10/1883 5/1888	1914	1	England Russia	8/1907	1914*	3
Germany Russia	6/1887	1890	2	Japan U. S. A.	10/1908	1909	3
Austria England Italy	2/1887	1895 (1897?)	3	Italy Russia	10/1909	1915*	3
Austria Italy Spain	5/1887	1895	2	Bulgaria Serbia	3/1912	1913	1
France Russia	8/1891 1894	1894* 1914*	3 1	Bulgaria Greece	5/1912	1913	1
China Russia	5/1896	1902(?)	1	Greece Serbia	6/1913	1918	1
Japan Russia	6/1896	1903	3	Czechoslovakia Yugoslavia	8/1920	1933*	
Austria Russia	5/1897	1908	3	Czechoslovakia Rumania	4/1921	1933*	1
England Portugal	10/1899	1949*	1	Rumania Yugoslavia	6/1921	1933*	1
France Italy	12/1900 7/1902	1902* 1915*	3 2	Czechoslovakia Rumania Yugoslavia	2/1933	(1939) 1941	1
				Belgium Fracne	9/1920	1936	1
England Japan	1/1902	1921	1	France Poland	2/1921	1939	1
				Poland Rumania	3/1921	1939	1

Table 7. *(cont.)*

Members	Incept.	Termin.	Class	Members	Incept.	Termin.	Class
Afghanistan Turkey	3/1921	1939(?)	1	Persia Russia	10/1927	1945	2
Persia Turkey	4/1926	1937*	2	Greece Rumania	3/1928	1934*	2
Afghanistan Persia	11/1927	1937*	2	Greece Turkey	10/1930	1934*	2
Afghanistan Iraq Persia Turkey	9/1937		2	Rumania Turkey	10/1933	1934*	2
				Turkey Yugoslavia	11/1933	1934*	2
Austria Czechoslovakia	12/1921	1927	2	Greece Rumania Turkey Yugoslavia	2/1934	1941	1
Estonia Latvia	11/1923	1940	1				
Czechoslovakia France	1/1924 1925	1924* 1939	3 1	Italy Turkey	5/1928	1938	2
Italy Yugoslavia	1/1924	1927	2	Greece Italy	2/1928	1938	2
Czechoslovakia Italy	7/1924	1930	3	Hungary Turkey	1/1929	1945	2
Russia Turkey	12/1925	1939(?)	2	Bulgaria Turkey	3/1929	1938*	2
Germany Russia	4/1926	1936	2	Bulgaria Greece Rumania Turkey Yugoslavia	7/1938	1941	2
France Rumania	6/1926	1940	2				
Afghanistan Russia	8/1926		2	France Turkey	2/1930	1940	2
Lithuania Russia	9/1926	1940	2	England Iraq	1932	1956	1
Italy Rumania	9/1926	1930	3	Finland Russia	1/1932	1939	2
Albania Italy	11/1926 1927	1927* 1939	3 1	Latvia Russia	2/1932	1940	2
France Yugoslavia	1/1927	1940	2	Estonia Russia	5/1932	1940	2
Hungary Italy	4/1927	1943	2	Poland Russia	7/1932	1939	2

Table 7. *(cont.)*

Members	Incept.	Termin.	Class	Members	Incept.	Termin.	Class
France	11/1932	1935*	2	Cuba	12/1936	1947	3
Russia	1935	1939	1	Dominican Republic			
				Ecuador			
England	6/1933	1936(?)	3	El Salvador			
France				Guatemala			
Germany				Haiti			
Italy				Honduras			
				Mexico			
Italy	9/1933	1941	2	Nicaragua			
Russia				Panama			
				Paraguay			
Germany	1/1934	1939	2	Peru			
Poland				U. S. A.			
				Uruguay			
Austria	3/1934	1938	3	Venezuela			
Hungary							
Italy				Italy	3/1937	1939	2
				Yugoslavia			
Estonia	8/1934	1940	3				
Latvia				Arabia	4/1936	1945*	3
Lithuania				Iraq			
				Yemen	4/1937		
France	4/1935	1938	3				
Italy				China	8/1937	1945*	2
				Russia			
Czechoslovakia	5/1935	1939	1				
Russia				France	12/1938	1939	3
				Germany			
Mongolia	3/1936						
Russia				Portugal	3/1939		2
				Spain			
Egypt	10/1936	1951	1				
England				Germany	5/1939	1943	1
				Italy			
Germany	11/1936	1945	3				
Japan				Denmark	5/1939	1940	2
Italy	11/1937	(1943)		Germany			
Bolivia	12/1936	1947	3	Estonia	6/1939	1940	2
Argentina		(1942)		Germany			
Brazil							
Chile				Germany	6/1939	1940	2
Colombia				Latvia			
Costa Rica							

NOTES

1   In addition to several master and doctoral dissertations which have utilized those materials, and some employment for teaching and simulation purposes, there are several other papers based on these data; see for example, Haas (1968) and Zinnes (1967). We have ourselves published two studies based on them; see Singer & Small (1967 and 1968).

2   Much of this work will be found in such journals as the present one, The *Journal of Conflict Resolution*, and Peace Research Society *Papers*, and a representative sampling is available in *Quantitative International Politics* (Singer, 1968).

3   The entire data deck may be håd at nominal cost from the authors, or from Raymond Tanter, Director of International Relations Archive, ICPR, University of Michigan.

4   On the basis of his UN Treaty Series project, however, Rohn (1968, p. 177) concludes 'no government had ever checked whether all their treaties actually appeared in the UNTS,' and that no hard evidence as to its completeness yet exists. In one such inquiry he found a 23 per cent gap between 'Canada's own published treaty records and Canada's treaties in the UNTS' (1966, p. 116).

5   We have not had a chance to consult *Treaties and Alliances of the World* (1969), a new volume which may prove to be useful.

6   A small terminological change was also made. In order to differentiate between independent national entities which had all the earmarks of sovereignty and thus qualified for inclusion, and those which lacked one or more critical attributes of statehood, we now include both sets of nations in the inter*national* system, but only include the former in the more restricted inter*state* system.

7   There are a few minor exceptions: India, despite League membership was not included until 1947, and Byelorussia and the Ukraine have never been included despite UN membership. The alternative rule is necessary because several important states are not UN members: Switzerland and the two Germanies, Koreas, and Vietnams.

8   For diplomatic status data and rankings, see Singer & Small (1966a) and Singer, Handley, & Small (1969); for military–industrial data and rankings, see Singer *et al.* (1969).

9   The nation code numbers, which have been adopted by a number of projects other than those at Yale and Michigan, and by the Inter-University Consortium for Political Research, are presented in Russett, Singer, & Small (1968).

10   The designations Class I, II, and III suggest a hierarchy based upon levels of political commitment, with the defense pact a more serious commitment than the neutrality pact, and the neutrality pact a more serious commitment than the entente. While a Class I alliance obviously is more serious than a Class II or a Class III, a Class III *may* be more serious than a Class II. In the nineteenth century, a *neutrality* pact was generally a more serious commitment than an entente. In the twentieth century, however, the entente seems to be a more serious commitment than the *non-aggression* pact.

11   While we are not immediately concerned with such alliances, we are planning to gather data on them in the near future. Aside from alliances contracted during the two wars, this will most likely involve fewer than 10 alliances.

12   In the original study, we used the concept of Alliance Involvement, measuring dyadic bonds via the equation $n(n-1)/2$. We believe that a more valid measure is the total number of nation-to-nation alliance commitments existing at any given time; thus, *all* such commitments, not only the dominant ones, are counted, and for any given alliance the number of commitments is $n(n-1)$.

13   Such concentration might be computed by use of the Gini index, for example, which reflects what fraction of the system's members account for what fraction of the commitments in force. It should also be noted that whereas the decimal point was omitted from Tables 5 and 6 of the original paper, we decided that the Alliance Commitment score would be more meaningful if we did include it here. The other difference, as indicated earlier, is that we have not computed either the Alliance Aggregation or Alliance Commitment Indicators for neutrality and entente agreements separately, since there were so few of either in this post-1945 period.

14   These were the three traditionally non-aligned states (Sweden, Switzerland, and Ireland), Spain, whose exclusion from NATO was largely in deference to anti-facist views in some of the Western nations, and Yugoslavia, which left the Soviet bloc in 1948.

15   A provocative hypothesis regarding the costs and gains of alliance membership, and the coalition building strategies which might be expected to result, is in Riker (1962). That hypothesis, based largely on domestic political systems, is now being tested for the international system; see Singer and Bueno de Mesquita (1969). A more general model of the factors that go into alliance formation is in Russett (1968).

16 Another might be Rhodesia, but its failure to achieve any substantial diplomatic recognition after the unilateral declaration of independence in 1965, leaves it outside of our interstate system.
17 The reasoning behind this classical balance of power argument is summarized and partially operationalized in Deutsch & Singer (1964) and partially supported in Singer & Small (1968). For a critical re-analysis of our data, see Zinnes (1967); other discussions of the issue are Gulick (1955), Liska (1962), Rothstein (1968) and Waltz (1964). A suggestive alternative model is in Galtung (1964).

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