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A Computer Search in Soviet Treaties[†]

The present article explores some of the implications of what happens when a typical research question in international law is asked against a computerized data bank. The question concerns the role of international institutions in Soviet treaties. The data bank covers the United Nations Treaty Series. The particular method of legal research is a man-machine combination. We will trace, step by step, the interplay of question-computer-answer in an actual search case. Then we will try to generalize from the case—in methodology, in substance, and in policy.

I—Chronology

The sequence of events in the case was as follows. The American Society of International Law established an informal working group on electronic data processing and international law documentation. An exploratory meeting was held in 1966 to survey on-going work in this field.¹ A second meeting, held in Pittsburgh, March 17-18, 1967,² selected two advanced enterprises for detailed attention. The one was the system which Professor John Harty had developed at the University of Pittsburgh. As part of Project LITE it was set up to retrieve computerized textual information from American defense-related treaties for the U. S. Department of Defense.³ The

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† This is a revised and completely re-written version of a paper prepared for a meeting of the working group on electronic data processing of the American Society of International Law, held in Pittsburgh, 17-18 March 1967.

¹ Edwards, "Electronic Data Processing and International Law Documentation," 61 *Am. J. of Int'l. L.* 87 (1967).

² The Am. Soc'y of Int'l Law, "Electronic Data Processing and International Law Documentation," *Transcript of Proceedings*, Pittsburgh, Pa., 17-18 March 1967 (2 Volumes).

³ See 8 *AF JAG Law Rev.* (No. 6), Nov-Dec 1966, Special Issue on LITE, Legal Information Thru Electronics, reprinted in Hearing Before a Subcommittee of the Committee on Government Operations, House of Representatives, 90th Cong., 1st Sess., August 1, 1967, at 51.

other was the system which the author developed at the University of Washington, and which is usually referred to as the United Nations Treaty Series Project, or simply UNTS Project.⁴ It relies on computerized coded information from all treaties in the United Nations Treaty Series. It is used primarily for trend analyses and other academic research in international law.

In preparation for the Pittsburgh meeting, the American Society of International Law invited search requests from prospective participants. These search requests were to be processed before the meeting so that the group would share some concrete examples with which to illustrate the prospects and problems of electronic research methods. The particular search request which prompted this article was directed to the UNTS Project. The search request asked for a listing of all Soviet bilateral treaties having a textual reference to any *ad hoc* commission. By way of research context, the request indicated that it aimed at confirming and quantifying the notion that the Soviet Union preferred *ad hoc* commissions over the International Court of Justice (ICJ) for the settlement of disputes arising from treaties. In the background was a question of practical policy. Where are the lines of least resistance in developing Soviet agreement to impartial treaty-interpreting procedures?

Our response to the search request combined human and electronic resources as follows. We first looked through some of our computer printouts listing all instruments in the United Nations Treaty Series (UNTS) by parties, topics, dates of signature, institutional references, and other coded characteristics.⁵ These materials showed (1) that the search request was answerable in the precise form in which it had been asked; (2) that the underlying assumption about the Soviet preference for *ad hoc* commission over the ICJ

⁴ Rohn, "The United Nations Treaty Series Project," 12 *Int'l Stud. Q.* 174 (1968).

⁵ The following unpublished tabulations show relevant analytical information. ("IGO" stands for international governmental organizations and is used broadly for any and all agencies established by international treaties.) Table 4.1: "All IGO's by Frequency of Occurrence in UNTS." Table 4.2: Same data ordered alphabetically by international organizations. Table 4.3: "All IGO Occurrences in UNTS in Order of IGO Identifying Each Treaty by UNTS Series and Number." Table 5.1: "Treaty-Making Frequency by Parties Over Time." Table 5.2: "Frequency of Passive IGO References Over Time." Table 7.1: "All Registrants Ordered by Number of Treaties Registered." Table 7.2: "All Registrants Ordered by Number of Treaties with Matching Party and Registrant."

seemed to be essentially correct; and (3) that our data bank was capable of responding to the original search request in a way that would be more subtle and more complex than a simple listing of Soviet treaties.

What most laymen would probably expect of a computerized search was in the first two points but not the third. And yet it was the third point which contributed the unique and most important features of automated legal research. The computer satisfied the first point by printing the list of Soviet treaties as requested and counting a total of 47 references to *ad hoc* commissions. The second point was a little more complicated. How did 47 compare with Soviet treaty references to the ICJ? Could we assume it was known how many ICJ references the Soviet Union had in its bilateral treaties? It happened to be an easy number to remember—zero. But was this fact so well known among international lawyers that it would literally go without saying? Even if we assumed it was known, it would be only one of many relevant facts. Most others would remain hidden in irrelevant mazes unless ferreted out and made visible by the computer in the sense of the third point of our response.

This, indeed, must have been the inner logic of the search request. It was no idle exercise in numbers. It reached out for sophistication—comparisons, concepts, frameworks, perspectives. But the search request was not close enough to the data to ask all the right questions all at once. Many of the best questions had to remain implicit until intermediate results of the search enabled us to re-cast them in answerable form. This is what man-machine systems are especially well suited to do—to respond to implied but unasked queries.

Our response to the unasked questions developed as an imaginary dialogue between researcher and computer. It was as if we kept saying to the computer: "While you are checking all the world's treaties for A and B anyway, check also for C and D." One step led to another. Items C and D made us curious about E and F, and so it went on. The problem was how to limit our curiosity in the face of the computer's practically unlimited capacity to produce more and more information. One way to limit this information explosion was to rank the items by relevance. But relevance is relative, and arguable. For example, it was argued that a comparison of Soviet treaties with Polish treaties was obviously the most relevant. Presumably there would be many similarities and some subtle dif-

ferences. From the differences it might be possible to draw some conclusions about the line of least resistance along which Soviet treaties might develop toward a greater reliance on international institutions for dispute settlement. But it was argued just as eloquently on the other side that we should first chart comparable treaty patterns of the United States and Canada, and that, without some such comparison, the Soviet and Polish figures would be as meaningless as telephone numbers. But why should we stop after Canada? It might be misleading to base treaty comparisons on superpowers and their neighbors. Perhaps a medium power and its neighbor might provide a better model of trends of treaty development. So it was argued to take on France and Belgium, or Brazil and Uruguay, or India and Burma. In all these cases, the problem was not one of how to ask for and how to get additional information. The problem was where to stop, and why.

There had to be a point of diminishing returns somewhere. But it kept eluding us as long as we argued in theoretical terms alone. As soon as we moved from speculation to experiments, a practical solution appeared. It proved itself over and over again and was elevated to an operational principle in our computerized research. It was simply to invest in what seemed at first an excessive number of feedback cycles with more and more information as long as the results remained diverse. Given computer speed, we would soon reach a point where any additional information tended to repeat a given pattern. That, then, was the point of diminishing returns. That point identified what was routine and what was unusual in treaty patterns. Once we knew this about any one part of the inquiry we could go on to the next.

So far we had assumed that in asking the computer for Soviet (Polish, American, Canadian, etc.) treaties, the computer would always check *all* the treaties of each above-named country. In other words, we had taken it for granted that the "other party" was the rest of the world. This would certainly yield some differences, and hopefully some meaningful differences. But then we speculated that the differences would come into much sharper focus if we could do a *double* comparison. For instance, we were thinking about getting one set of figures for Soviet treaties with the rest of the Soviet Bloc and another for Soviet treaties with all non-Bloc countries. At the same time, we could also get a double set for USA treaties, with NATO and with non-NATO countries, and for various international organi-

zations.⁶ As we approached the point of diminishing returns in these permutations, we had meanwhile accumulated information on treaty behavior by *groups* of countries, and we were beginning to think in these terms. Perhaps group comparisons would be more meaningful than individual ones? This idea led first to the usual geo-political groupings like NATO, Warsaw Pact, Latin America, and so forth. Many preliminary questions arose in connection with these groupings. Should we include the United Kingdom with Europe? Should we have a special group for Benelux even though the region is totally within the Common Market? How should we handle the multiple overlaps with NATO, Scandinavia, Commonwealth, and so forth? Should Cuba and/or Yugoslavia be included with the Soviet Bloc? Again, we solved most of these problems operationally by running experiments with more than one alternative, and by choosing whichever combination seemed best to bring into focus the relevant information. For example, tentative results suggested that, within the Soviet Bloc, a core area should be distinguished from the rest, and that Yugoslavia should be kept apart from the entire Bloc. At another point we started wondering about the wisdom of limiting our choice of groups of States to the usual geo-political clusters. Should we not also look at some of the groupings that had been generated by the very process of automated research? For example, should we not group States by their total number of treaties regardless of traditional geo-political groupings? Might not some otherwise hidden distinctions emerge if we divided the world into high-active, medium-active, and low-active treaty makers? But by what standards should we measure high, medium, and low? Again here, we refined our guesswork by first testing a few alternative cutoff points on the computer against our entire data bank. The following division seemed to give the best results for this particular comparison: (1) States with 200 or more treaties, (2) 100-199, (3) 50-99, (4) 1-49. Finally, we turned to world-wide summary figures and divided all treaties by such formal

⁶ The earlier version of this article (see headnote) included four tables, one each for some of the possible permutations. However, the information has meanwhile been re-arranged and compressed into the sole Table 1 of this article. The original four printouts were as follows: Table 10.1: "IGO References in Treaties Between Selected States and Rest of World." Table 10.2: "IGO References in Treaties Between Selected States and Sino-Soviet Bloc." Table 10.3: "Non-Signatory IGO References in Treaties Between IGO's and Rest of World." Table 10.4: "Non-Signatory IGO References in Treaties Between IGO's and Sino-Soviet Bloc." Some copies of the original four tables are available on request for professional distribution.

TABLE I
UNTS PROJECT, PHASE 10
INSTITUTIONAL REFERENCES IN TREATIES
UNTS VOLUMES 1-503

LINE	CODE	PARTY/SET	NUMBER ALL TREATIES	NUMBER ALLIGO REFERS	AVERAG IGOREF PERTRT
(1)	(2)	(3)	(4)	(5)	(6)
1	128	U.S.S.R.	259	56	0.22
2	102	POLAND	161	61	0.38
3	32	CZECHOSLOVAKIA	192	71	0.37
4	53	HUNGARY	105	33	0.31
5	—	SET A-4 CORE SOVBLOC	631	193	0.31
6	—	SET B-12 SINOSOVLOC	801	245	0.31
7	140	YUGOSLAVIA	314	134	0.43
8	30	CUBA	49	15	0.31
9	—	SET B-12 + YUGO + CUBA	1009	339	0.34
10					
11	131	U.S.A.	2547	685	0.27
12	130	UNITED KINGDOM	895	384	0.43
13	19	CANADA	307	103	0.34
14	—	SET C-3 CORE NATO	3482	1089	0.31
15	42	FRANCE	321	149	0.46
16	46	GERMANY(WEST)	229	135	0.59
17	61	ITALY	299	171	0.57
18	—	SET D-3 BENELUX	812	370	0.46
19	—	SET E-6 COMMON MARKET	1507	758	0.50
20	—	SET F-3 CORE SCAND	767	398	0.52
21	—	SET G-12 EURONATO	2381	1238	0.52
22	—	SET H-25 WEST EUROPE	3498	1734	0.50
23	—	SET I-5 CORE COMWEALTH	1509	575	0.38
24	—	SET J-23 WEST INDUST	5451	2148	0.39
25					
26	12	BRAZIL	148	61	0.41
27	30	CUBA	49	15	0.31
28	82	MEXICO	104	43	0.41
29	—	SET K-22 LATIN AMERICA	1288	433	0.34
30	55	INDIA	207	94	0.45
31	60	ISRAEL	183	61	0.33
32	64	JAPAN	245	115	0.47
33	—	SET L-27 NONBLOC ASIA	1753	865	0.49
34	47	GHANA	33	26	0.79
35	127	U SOUTH AFRICA	111	25	0.23
36	129	UAR/EGYPT	133	93	0.70
37	—	SET M-36 AFRICA	641	469	0.73
38	—	SET N-91 NONBLOC DEVELOP	4086	2013	0.49
39					
40	—	SET O-16 200+ TREATIES	5631	2184	0.39
41	—	SET P-17 100-199 TREATIES	2266	999	0.44
42	—	SET Q-26 50-99 TREATIES	1833	766	0.42
43	—	SET R-72 1-49 TREATIES	1333	734	0.55
44					
45	—	TOTAL STATE-STATE BILATS	5902	2292	0.39
46	—	TOTAL ONLY STATES MULTIS	613	848	1.38
47	—	TOTAL IGOS IN ANY COMBIN	1191	904	0.76
48					
49	—	WORLD TOTAL	7949	4211	0.53

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COL 6 —WORLD AVERAG	NUMBER UN SET REFERS	PERCENT COL 8/5	NUMBER AD HOC REFERS	PERCENT COL 10/5	NUMBER COURTS REFERS	PERCENT COL 12/5
(7)	(8)	(9)	(10)	(11)	(12)	(13)
-0.31	8	14.3	47	83.9	0	0.0
-0.15	12	19.7	48	78.7	1	1.6
-0.16	25	35.2	43	60.6	0	0.0
-0.22	9	27.3	23	69.7	0	0.0
-0.22	50	25.9	137	71.0	1	0.5
-0.22	65	26.5	174	71.0	1	0.4
-0.10	40	29.9	90	67.2	11	8.2
-0.22	11	73.3	4	26.7	1	6.7
-0.19	111	32.7	218	64.3	13	3.8
-0.26	399	58.2	162	23.6	67	9.8
-0.10	181	47.1	99	25.8	36	9.4
-0.19	39	37.9	33	32.0	6	5.8
-0.22	591	54.3	265	24.3	108	9.9
-0.07	71	47.7	47	31.5	23	15.4
0.06	47	34.8	41	30.4	12	8.9
0.04	59	34.5	70	40.9	15	8.8
-0.07	162	43.8	102	27.6	43	11.6
-0.03	328	43.3	233	30.7	87	11.5
-0.01	189	47.5	140	35.2	45	11.3
-0.01	552	44.6	403	32.6	136	11.0
-0.03	845	48.7	558	32.2	200	11.5
-0.15	289	50.3	144	25.0	52	9.0
-0.14	1122	52.2	660	30.7	249	11.6
-0.12	24	39.3	34	55.7	6	9.8
-0.22	11	73.3	4	26.7	1	6.7
-0.12	24	55.8	18	41.9	7	16.3
-0.19	261	60.3	143	33.0	66	15.2
-0.08	60	63.8	31	33.0	17	18.1
-0.20	42	68.9	18	29.5	10	16.4
-0.06	82	71.3	31	27.0	23	20.0
-0.04	610	70.5	218	25.2	158	18.3
0.26	17	65.4	8	30.8	3	11.5
-0.30	20	80.0	3	12.0	2	8.0
0.17	54	58.1	35	37.6	10	10.8
0.20	309	65.9	125	26.7	85	18.1
-0.04	1205	59.9	637	31.6	313	15.5
-0.14	1070	49.0	743	34.0	243	11.1
-0.09	542	54.3	382	38.2	119	11.9
-0.11	453	59.1	242	31.6	86	11.2
0.02	482	65.7	203	27.7	143	19.5
-0.14	1081	47.2	840	36.6	207	9.0
0.85	476	56.1	117	13.8	62	7.3
0.23	663	73.3	172	19.0	217	24.0
0.00	2381	56.5	1133	26.9	538	12.8

categories as bilateral, multilateral, and organizational. And so the work proceeded through many feedback cycles from the researcher's desk to the computer and back again until it settled into the format shown in Table 1, *infra*, p. 666.

II—Findings

The computer checked all Soviet bilateral treaties in the United Nations Treaty Series (UNTS) and found 47 textual references to international *ad hoc* commissions of various sorts. The search covered the entire UNTS from the beginning to the present, *i.e.*, approximately the 20-year period from 1945 to 1965, or more precisely, UNTS Volumes 1 to 503. This finding of 47 textual references to *ad hoc* commissions is meaningless as such. It derives its analytical significance from the multiple comparative setting of Table 1. There, the figure of 47 is but one among 440 pieces of interrelated information.

Most of Table 1 belongs to the category of "perspective" information rather than "retrieval" information. Popularly expressed, "retrieval" information is nothing but a substitute for rote memory, or for a manual filing system. It is the act of putting information into machine-usable form and having the computer recall and print out anything in exactly the same way in which it has been put in. The only advantages over manual methods are speed and accuracy. By contrast, "perspective" information complements and refines the expert's sense of proportions. "Perspective" information in this sense is something new. It has never been put into the computer as such. It is created jointly by researcher and computer out of raw data. The man-machine system thereby resembles and simulates the human expert's mental process of sifting, comparing, rank-ordering, and generally organizing information. Thus, "perspective" information is the result of having the computer re-arrange raw facts until they fall into the kind of patterns which we normally associate with a systematic body of knowledge. Let us now explore Table 1 for some of the possibilities of using the man-machine system to generate "perspective" information.

The Soviet Setting

In the original query, there was a clear implication to go beyond counting Soviet treaty references to *ad hoc* commissions (Line 1, Column 10). For instance, there is now a total for all institutional references in Soviet treaties (Line 1, Column 5). For sheer con-

venience, this 47:56 comparison comes also as a percentage, 83.9% (Line 1, Column 11). This percentage will be important in comparisons with other countries but we must first exhaust the findings about Soviet treaty practice alone. Another implication of the original inquiry was to look at the total number of Soviet treaties to get some idea of the relative importance of institutional references in all Soviet treaties. There are 259 Soviet bilateral treaties (Line 1, Column 4). For convenience, the same information is expressed as institutional references per treaty, 0.22, or an average of just over one such reference per five treaties (Line 1, Column 6). Comparisons with other national averages are made easy by Column 7. The information is in substance the same as that in Column 6 except that it is expressed as deviation from world average. Given a world average of 0.53 institutional references per treaty (Line 49, Column 6), the Soviet rate of 0.22 (Line 1, Column 6) is 0.31 below world average (Line 1, Column 7). The significance of this figure will shortly become apparent from various other comparisons.

While still within the Soviet treaty pattern, we might wish to know which other international institutions are being referred to in Soviet treaties. We know now that out of a total of 56 references, 47 concern *ad hoc* commissions but we do not know what the remaining 9 are. We knew from other aspects of the UNTS Project that the United Nations and the Specialized Agencies account for the largest bulk of all institutional references, and that the ICJ and other international courts account for another major portion. We therefore had the computer divide all institutional references into three groups as follows: (1) United Nations and U. N.-related agencies, (2) *ad hoc* commissions, and (3) international courts. The results show that 8 of the 9 other references in Soviet treaties come under the United Nations category (Column 8) and that none applies to an international court (Column 12). The ninth reference must be somewhere outside these three categories. It probably concerns a regional organization or any other non-U.N.-related permanent agency. If we want to eliminate the distortion caused by absolute figures, the percentages will be most useful for comparisons among various States and groups of States (Columns 9, 11, and 13).

So far we have learned some new but rather barren facts about Soviet treaties. It may intuitively seem low for a major country to have only 259 treaties in the entire UNTS. This is a rate of about

12 treaties per year.⁷ But we cannot be sure until we look at comparable figures for other countries. Similarly, it may seem that 83.9% is rather high for the share of *ad hoc* commissions in all institutional references but how would anyone be able to prove that there was anything unusual about this percentage in the case of the Soviet Union? Also, the Soviet average of 0.22 institutional references per treaty—is it high or low in comparison with other countries? Finally, it would seem obvious that the Soviet score of zero in regard to international courts must be low but the question still remains how many other countries show the same score of zero, and especially which ones? Table 1 downward from Line 1 shows the answers for some other countries and groups of countries. This will not be a detailed commentary on each of the 440 findings of Table 1. It will merely select some of the more significant cases to illustrate the main points of substance and to show the reader how to translate the results of a man-machine system into the familiar language of legal research.

Comparisons with Poland, Czechoslovakia, Hungary

Looking at the findings of Poland, Czechoslovakia, and Hungary (Lines 2, 3, 4), we find that the Soviet Union has more treaties than any of these three countries but that the difference is not as great as might have been expected (Column 4). What is more surprising, perhaps, is the size of the differences among the other three countries. All the more surprising, then, is the constancy of institutional references per treaty for the three countries. They average approximately one reference per three treaties. Only the rate of the Soviet Union itself is much lower, one reference per five treaties (Column 6). The Soviet rate is also much lower in the share of U.N.-related references, approximately 14% as compared with 20%, 35%, and 27% in the three other countries (Column 9). By contrast, the Soviet share of *ad hoc* commission references is higher than that of any other Eastern European countries, *i.e.*, 84% as compared with 79%, 61%, and 70%. Finally, court references show the Soviet Union at zero in equal company with Czechoslovakia and Hungary. Poland is the only country of the core area of the Soviet Bloc (and, as

⁷ For a detailed analysis of the so-called gap problem in the UNTS see Rohn, "Canada in the United Nations Treaty Series: A Global Perspective," 4 *Canadian Yb. of Int'l Law* (1966), and Rohn, "Turkish Treaties in Global Perspective," 6 *Turkish Yb. of Int'l Rel.* 119 (1965). No analogous studies of the gap have yet been made for other countries and we have therefore no choice but to disregard the gap for comparative purposes.

we will soon see, of the entire Sino-Soviet Bloc) that has a single reference to an international court.⁸ Cuba has a similar reference.⁹ Both cases show rather special circumstances.¹⁰ We can conclude for the first four countries of the Soviet Bloc that their rate of treaty reliance on international institutions seems to be generally uneven. They all seem to prefer *ad hoc* commissions over U.N. agencies, and U.N. agencies over international courts. The Soviet Union is the extreme representative of what seems to be a general characteristic of Soviet Bloc countries. The hierarchy of the other three countries is inconsistent. Poland resembles the extreme Soviet position in the low share of U.N.-related agencies but on the other hand Poland is farthest from the Soviet model in the rate of total institutional references per treaty. Also, as we just saw, Poland is the only Soviet Bloc country with a court reference.

Soviet Bloc

The next two lines show for the first time the treaty patterns of groups of States as groups.¹¹ Line 5 comprises all treaties of the four above countries collectively styled "CORE SOVBLOC." Line 6 includes all 12 countries of the Sino-Soviet Bloc as usually defined, excluding Yugoslavia and Cuba (Lines 7 and 8). Here we see that the extension from Core Soviet Bloc to Sino-Soviet Bloc is nearly negligible in relevant treaty behavior. While the number of countries increases from 4 to 12 (by 200%) the number of treaties increases only from 631 to 801, or by about 25%. Most of the percentages remain the same or nearly the same. Most of the quantitatively significant intra-Bloc deviations seem to occur within the Core Bloc.

⁸ A standard agreement with the U.N. Special Fund about financing a project, 344 UNTS 29, dated 15 Oct. 1959.

⁹ As in note 8 above, a standard agreement with the U.N. Special Fund about financing a project, 390 UNTS 35, dated 10 March 1961.

¹⁰ Both are standard agreements rather than individually negotiated wordings. Also, both provide for ICJ involvement in dispute settlement but only through a remote and indirect procedure. If two appointed arbitrators cannot agree on a third one, then the President of the ICJ shall appoint the third arbitrator.

¹¹ All groups of countries are identified on Table 1 by the initial term "SET" followed by a capital letter in alphabetical order, and by a numeral which indicates the total membership of the group. For instance, SET D-3 BENELUX includes the following three countries: Belgium, Netherlands, Luxembourg. Most groupings follow generally accepted definitions. Doubtful cases are explained in the text where it seemed important, or summarily categorized. A full list of all group members as used in Table 1, A through R, is available on request for professional distribution.

Yugoslavia

As soon as we come to Yugoslavia, however, the pattern changes abruptly and significantly. Even before looking at Yugoslavia's reliance on institutions, we can notice a major difference by merely comparing her total number of treaties to Soviet Bloc countries. Yugoslavia has 25% more treaties than the Soviet Union, over 50% more than Czechoslovakia, almost twice as many as Poland, and three times as many as Hungary (Column 4). The number of institutional references is in part even more discrepant, *i.e.*, about $2\frac{1}{2}$ times as many as the Soviet Union and Poland and twice as many as Czechoslovakia (Column 5). The rate of references per treaty is almost twice that of the Soviet Union and higher than that of any Soviet Bloc country (Column 6). In reliance on U.N. agencies as against *ad hoc* commissions, Yugoslavia is more U.N.-oriented than any Bloc country except Czechoslovakia. The most dramatic difference, however, between Yugoslavia and the Bloc is in court references, both in absolute figures and in percentages (Columns 12 and 13). There is no longer any similarity at all and we must look, for the first time, beyond the Soviet Bloc toward Western countries to find patterns that are comparable to the Yugoslavian. And so, disregarding Cuba because its mid-period shift from West to East cancels out much of its treaty profile, we turn to the United States, NATO, Western Europe, and other non-Bloc countries and groups.

Comparisons with the United States

All previous findings of the UNTS Project have made a special point of the giant-dwarf proportion between American treaties and those of most other countries in the world. It can hardly be often enough repeated, or overemphasized, how gigantic the American preponderance is in the world's network of treaties (Column 4). American treaties outnumber those of the Soviet Union at the approximate rate of 10:1. Even Great Britain, the world's second largest treaty-maker, is outnumbered by America at the rate of about 3:1. The only way to make the United States comparable is to group other countries together. Even so, the United States outnumbers the entire 36-State group of Africa at the rate of 4:1, the entire 12-State Sino-Soviet Bloc at better than 3:1, the 22-State group of Latin America at 2:1, and the total of the 6 Common Market countries as well as the 5 core countries of the Commonwealth at somewhat less than 2:1. The only

groupings of similar size are the 12 Continental NATO countries (Line 21), the 25 countries of Western Europe (Line 22), and all the world's 91 underdeveloped countries outside the Sino-Soviet Bloc (Line 38). In view of this vast disproportion of magnitudes, American treaties can be compared to others only by reminding the analyst to make mental quantum jumps when dealing in absolute figures. Of course, percentages (Column 6) remove the problem and make American treaties reasonably comparable, and probably surprising in other ways.

Contrary to common-sense expectation, the American rate is lower than that of any listed Soviet Bloc country except the Soviet Union itself. One might suppose that somehow the statistics carry a bias which lowers the rate of Western countries. But a glance farther down Column 6 destroys this hypothesis. In fact, common sense holds true in that most Western countries score considerably higher than most Soviet Bloc countries. Only the United States shows such an exceptionally low rate of treaty reliance on international institutions. On the other hand, within the limits of its own reliance on institutions, the United States allows a much larger share for U.N. agencies than does any listed Soviet Bloc country, and also somewhat more than most other Western countries. The American share of U.N. reliance is more than twice that of the Sino-Soviet Bloc average (Line 6) and about 10% above that of the average of 23 Western industrialized countries (Line 24). On *ad hoc* commissions, the American percentage is only slightly lower than that of most Western countries and, of course, much lower than that of the Soviet Bloc countries. In references to international courts, the United States is also low by Western standards although not at the bottom. Even lower than the United States are Great Britain, Germany, Italy, South Africa, and Canada, in this descending order. Canada is by far the lowest of major Western countries in this respect. All of them, however, even Canada, are much higher than any of the Soviet Bloc countries. Yugoslavia scores with the lowest Western countries, between Italy and South Africa, but considerably above Canada and quite out of reach of the Soviet Bloc.

It is not easy to sum up the American pattern. There is a clear political message in the low rating of institutional references in general, and courts in particular. It suggests a classical big-power reluctance to accept formal restraints in its international behavior. On the one hand, this reluctance contrasts oddly with the gigantic role played

by the United States in international legal processes. On the other hand, there is one major exception. American treaties favor U.N. agencies. While American reliance on international institutions in general is very low, and almost as low as that of the Soviet Union, American reliance on U.N. agencies is higher than that of any other Western country, much higher than the world average, and incomparably higher than the Soviet Bloc.

Other Western Countries

By now the reader will have seen the way in which the tabular material can be used for perspective information on Soviet treaties and institutional references. We need not translate all the remaining information from numbers into words. A few of the highlights may suffice to suggest further explorations. For instance, the losers of World War II show exceptionally high but uneven rates of institutional reliance (Column 6, Lines 16, 17, and 32). For instance, Japan scores near average on total institutions but leads the world in reliance on courts. The Japanese rate is more than twice that of the United States and almost four times the rate of Canada. Germany, by contrast, has the highest rate on total institutions among major Western countries but is quite low on courts. Curiously, a similar pattern emerges from French treaties but it is closer to the Japanese than to the German model. France is moderately high on institutional references in general and extremely high on courts in particular. Indeed, France has by far the highest court rate of any major Western country. The contrast with Canada on the opposite end of the pole is one of the most dramatic of the entire tabulation, and hard to explain. Also surprisingly, the countries of Continental Western Europe score generally higher on courts than do Anglo-Saxon countries. Underdeveloped countries average high scores on institutions generally, and on U.N. agencies and courts in particular. Conversely and necessarily, they score low on *ad hoc* commissions. Their averages tend to hide some widely scattered scores within the group. Africa generally scores high on total institutions as well as on courts while Latin America scores low on total institutions but high on courts. For instance, Haiti and Panama are very low while Dahomey and the Ivory Coast are very high (not shown on present tabulation). South Africa places the least reliance on international institutions among Western countries. It scores lower than the United States and comes within the smallest shown fraction of a point of tying with the Soviet Union for the world's

bottom spot. Likewise, except for Canada, South Africa is the lowest Western country on court references.

Types and Frequency of Treaties

The remaining information concerns neither individual state nor the familiar geo-political groupings of countries. Instead, it relates to groups based on formal criteria of legal statistics and created by the process of computerized research. The first group shows countries by their treaty-making frequency. There is not much difference between the first three groups—high, medium, and low. Only the bottom group with less than 50 UNTS treaties shows a substantial increase in relative reliance on international institutions. Other UNTS Project findings suggest that this increase is deceptive. The very low number of treaties signed by those countries, their recent independence and immediate involvement in the various aid and development programs of the United Nations and Specialized Agencies let the percentages of institutional references appear misleadingly high. As these countries grow into the normal proliferations of treaty making, the percentage of their early institutionalism is bound to go down.

The last four lines of Table 1 concern various forms of world totals by three of the major categories of treaties, (1) bilateral treaties between States (Line 45), (2) multilateral treaties among States (Line 46), and (3) treaties which involve at least one international organization as signatory regardless of whether the other party is a State or international organization, and whether the form is bilateral or multilateral. The number of treaties in these three categories relates approximately as 10:1:2. Institutional references differ inversely but inconsistently. They are the most dramatic of any group differences shown in this study. The rate of institutional reliances is lowest among the State-State bilaterals, highest among State multilaterals, and intermediate among organizational treaties. The rates relate approximately as 1:4:2. It seems reasonable that bilateral treaties between States should have the least institutional references. What may surprise, however, is the rank order of the other two. One might expect organizational treaties to have more such references than multilaterals among States. This may in fact be true. However, a coding rule excluded all "self-references," *i.e.*, references to an institution that was also a signatory. Thus, international organizations carry a bias in the data base of the UNTS Project which, paradoxically, makes their treaties appear less institution-oriented than they actually are. Nevertheless, it is

doubtful whether this fact alone can explain the spectacular difference in references between organizational and multilateral State treaties. The image is further confounded by the uneven distribution of the difference over the three types of institutional references. In fact, the organizational treaties behave as experts would expect in two of the three types of references, *i.e.*, U.N. agencies and courts. They clearly lead in U.N. references, and dramatically so in court references (Columns 9 and 13). The only type where they fail to lead is in *ad hoc* commissions.

Some of the overall perspectives on the world's network of treaties (Line 49) may already be familiar from other UNTS Project publications.¹² We know that there have been about 8,000 treaties in the first 20 years since World War II, and we know that slightly more than half of them on the average contain a reference to an international institution. We did not know before but found here that of the institutional references about half concern U.N. agencies; one quarter, *ad hoc* commissions; one eighth, courts; and that the final eighth (unaccounted for here) concerns various other institutions, mostly regional and non-U.N. global.

III—Conclusion

It should be clear even without a specific disclaimer that findings such as these are not being presented as a substitute for a depth analysis of Soviet treaties,¹³ or treaties in general.¹⁴ But neither is a

¹² In addition to notes 4 and 7 above, see Rohn, "Institutionalism in the Law of Treaties: A Case of Combining Teaching and Research," 59 *Proceedings of Am. Soc'y of Int'l L.* 93 (1965); Rohn, "War as Reflected in the U.N. Treaty Series," 24 *Proceedings of the San Diego Institute on World Affairs* 276 (1966); Rohn, "The U.N. Treaty Series Project as Computerized Jurisprudence," 2 *Texas Int'l L. Forum* 167 (1966); Lejnieks, "The Nomenclature of Treaties: A Quantitative Analysis," 2 *Texas Int'l L. Forum* 175 (1966); Vaughn, "Expropriation in International Law: Traditional vs. Quantitative Research," 2 *Texas Int'l L. Forum* 189 (1966); O'Hara, "Trends in the Use of Compromissory Clauses," unpublished paper presented to 1967 Convention of the International Studies Association, New York City, 14 April 1967, copies available for professional distribution; Phillips, *The Bilateral Treaty Network of Non-Western States*, forthcoming in Deener, editor, *De Lege Pactorum*.

¹³ The standard work is Triska and Slusser, *The Theory, Law and Policy of Soviet Treaties* (1962). More recent literature includes Prugh, "Soviet Status of Forces Agreements: Legal Limitations or Political Devices," 1963 *Mil. Law Rev.* 1; Bracht, "Grundzüge des Internationalen Vertragsrechts nach Sowjetischer Völkerrechtstheorie," 4 *Jahrbuch für Ostrecht* 73 (1963); Triska, "Soviet Treaty Law: A Quantitative Analysis," 29 *Law and Contemp. Prob.* 896 (1964); Molodcov, "International Law Studies in the USSR," in USSR

traditional treatment of any aspect of treaty law a substitute for the particular information and insight obtainable through a man-machine system for the present type. The two are complementary rather than competitive.

1. *Methodology.* It would have been impossible by any non-computerized method to contrast Soviet treaty characteristics with the patterns of adjacent countries, non-Soviet Bloc countries, and regional and other groups of countries. Neither would it be possible to produce the intellectual fringe benefits of a global perspective at little or no extra cost in time and effort. And yet we must beware of expecting the computer to harmonize legal thought, or any thought. The harmonies of thought that dwell in a computer are *latent*, like the harmonies of music in a piano. To bring them to life it takes all three elements: (a) the instrument itself, (b) technical dexterity, and (c) some mental image of the final product. While obvious in music, these ingredients are not yet quite so obvious in computerized legal research. Here, too, the instrument itself is not enough even when combined with technical dexterity. There must also be a human link between the substantive problem in legal research and the response potential in the computer. It is a kind of translation. At some point of the process there has to be someone who is methodologically bilingual. Neither man nor machine alone can optimize the potential

Academy of Sciences, *Social Sciences in the USSR* 269 (1965); Ginsburgs, "Soviet Status of Forces Agreements: Pre-War and Wartime Experience," 16 *U. Toronto Law J.* 368 (1966); Maggs and Jerz, "Significance of Soviet Accession to the Paris Convention for the Protection of Industrial Property," 48 *J. Pat. Off. Soc'y* 242 (1966); Schmitthoff, "Commercial Treaties and International Trade Transactions in East-West Trade," 20 *Vand. L. Rev.* 355 (1967); Ramundo, *Peaceful Coexistence: International Law in the Building of Communism* (1967).

¹⁴ *Am. J. of Int'l L.* No. 3 (October 1967), Special Issue on the Law of Treaties; Blix, *Treaty-Making Power* (1960); Chiu, *The Capacity of International Organizations to Conclude Treaties* (1966); Degan, *L'Interprétation des Accords en Droit International* (1963); Holloway, *Modern Trends in Treaty Laws* (1967); Hoyt, *The Unanimity Rule in the Revision of Treaties, a Reexamination* (1959); Hudson, *International Legislation* (1931); Kasme, *La Capacité de l'Organisation des Nations Unies de Conclure des Traités* (1960); McDougal, Lasswell and Miller, *The Interpretation of Agreements and World Public Order* (1967); McNair, *The Law of Treaties* (1961); Schneider, *The Treaty-Making Power of International Organizations* (1959); Toscano, *The History of Treaties and International Politics* (1966); Wilson, *The International Law Standard in Treaties of the United States* (1953); 27 *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht* No. 3 (October 1967), Special Issue on the Law of Treaties; Zemanek, *Das Vertragsrecht der Internationalen Organisationen* (1957).

of computerized research. They must fuse into one operational system. Then and then only does computerized research "work" in international law.

2. *Substance.* The factual findings of this study lend themselves to the following interpretations.

(1) The treaties of the Soviet Union show a world-wide low in their reliance on international institutions, and an absolute zero in their reliance on courts.

(2) The other Soviet Bloc countries are also low on institutions, but not nearly so low as the Soviet Union itself. They are also at or near zero on courts.

(3) Yugoslavia has clearly moved out of the Soviet Bloc pattern on both counts, and especially so on courts.

(4) The United States is surprisingly similar to the Soviet Union in percentages but not in absolute figures, and not with regard to U.N. agencies and courts.

(5) Other Western industrialized countries are more institution-oriented than the United States, and much more so than the Soviet Union. Yet, there are wide differences among them, especially between Anglo-Saxon and Continental European.

(6) Underdeveloped countries are the most institution-oriented by percentages but this may well be a function of certain transient factors among new States because, among them, Africa is highest and Latin America lowest.

(7) There is little difference among high-active, medium-active, and low-active treaty makers except that the very lowest in total activity are the very highest in reliance on institutions. The qualification of transience in Item (6) above also applies here.

(8) There are major and spectacular differences among formal types of treaties—bilateral, organizational, and multilateral, in this ascending order of reliance on institutions.

3. *Policy.* The substantive findings suggest the following policy points to be kept in mind when negotiating with the Soviet Union about dispute settlement clauses in draft treaties, including the International Law Commission's 1966 Draft Articles on the Law of Treaties.¹⁵

¹⁵ U.N. Gen. Ass. Off. Rec. 21st Sess., Supp. No. 9 (A/6309/Rev. 1) *Reports of the International Law Commission*. For official comments by Member States, see U.N. Doc. No. A/6827/Add.2, 6 Oct. 1967, *Law of Treaties*, Comments by United States of America, see especially at 11 and 12 for state-

(1) Unbroken Soviet practice suggests we should not expect a full-fledged commitment to ICJ settlement in a bilateral treaty. Therefore, it would seem that negotiations on this point, if successful, would have to sacrifice so much else that even the attempt is probably in most cases inadvisable.

(2) Our data bank does not identify all signatories of multilateral treaties, and there may still be many unexamined variations for individual countries. However, the spectacular increase of court reliance in all multilateral treaties makes it at least probable that this would be a line of lesser resistance. Hence, where there is a choice between bilateral and multilateral modes of agreement, the multilateral would seem preferable for the purpose of introducing a judicial settlement clause into Soviet treaty practice.

(3) Judicial settlement itself is a sliceable concept and a compromise solution on the model of Polish and Cuban U.N. Special Fund agreements may be better than no solution at all.¹⁰ In those cases, the settlement procedure itself is merely arbitrational but the ICJ becomes involved, although only potentially and, even then, marginally, if the two first-named arbitrators fail to agree on a third. Although a very thin achievement in itself, it might accomplish an important long-range educational function in gradually habituating the Soviet Government to the idea of involving the ICJ in dispute settlement.

(4) Soviet distrust of judicial settlement applies not only to treaties with Western countries but *equally* to treaties with other Soviet Bloc countries. Therefore, a sophisticated Western legal diplomacy could try to encourage the use of judicial settlement clauses in *intra*-Bloc treaties. If successful, and as the genuine disagreements within the Soviet Bloc are widening, the Soviet Government might come to appreciate judicial agencies as good functional tools of international legal craftsmanship, and might use them later in *extra*-Bloc treaties as well.

(5) The continued and increased involvement of the Soviet Union in international organizations makes its acceptance of judicial settlement more likely in the long run as shown by the overwhelming odds by which organizational treaties favor judicial settlement. Also,

ments on reference to impartial determination including the ICJ, arbitration or other methods, and U.N. Doc. No. A/6827, 31 Aug. 1967, *Law of Treaties*, Comments by Union of Soviet Socialist Republics at 25.

¹⁰ See notes 8, 9, and 10 above.

the standardized format of many organizational treaties makes it technically most inconvenient to insist on special procedures for individual countries. This is, in fact, a form of multilateralization. In this process, the bureaucratic compulsion to conform tends to win over any but the most carefully considered political purposes. If only the issues are small enough, the Soviet Government may thus gradually slide into judicial settlements without ever having to face a major political decision on this point.

Beyond the immediate prompting of this search in Soviet treaties we might consider a more general observation. In taking this quantitative approach to the law of treaties we might ponder the fact that some image of international political reality comes through in treaty statistics. Treaties do fall into patterns, and the patterns make some general political sense. They correspond by and large to expectations. And yet, there have been some surprises at several points in this study—inconsistencies, unexplained oddities, non-systemic features, and a touch of apparent randomness here and there.

Might it not be possible to interpret this randomness as a sign of opportunity? May it not mean that there is a certain amount of loose-jointedness in the machinery of the world's treaties? If so, progressive innovation in the law of treaties is not limited to the dichotomy between supporters and opponents among governments. There is a third possibility. There may be indifference. There may be a large array of non-purposive (and hence adaptable) attitudes to treaties floating freely among the legal advisers of the world's foreign ministries. This fluidity may account for the random variations observed in the computer printouts. We may interpret this as a hopeful sign of flexibility in the way the historical stage is set for the 1968 and 1969 Conferences on the Law of Treaties.