Computers, Treaties and Theories *

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1. PURPOSE

Few quantitative studies have as yet been published in international law, and none has made a general claim to the effect that magnitudes are relevant to a comprehension of the field as a whole. To make and to substantiate that claim is the primary purpose of this article and of the book *Treaty Profiles* from which the article has been excerpted.

A former Judge on the Permanent Court of International Justice and Professor at Harvard Law School, Manley Hudson, once said about quantification in international law (as related by Professor Julius Stone):

> « Count, by all means count, but count
> the things that count ».

This study is an attempt to take that quip seriously, as it deserves, and to work it out in systematic detail. The purpose is to be achieved not by argument but by experiment. The study does not polemicize against traditional scholarship. It simply offers a new approach—to be blended with conventional approaches where appropriate and to be ignored where irrelevant.

Now in the mid-1970's it can safely be said that one of the great debates of the past decade is over and that the legal profession has made its

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peace with the computer age. It is a cold peace, however, and a limited peace. The profession has accepted computers as efficient substitutes for clerks, typists, file cabinets, indexes, abstracts, keynotes and at most for some of the purely mechanical functions of human memory. The profession still tends to shy away from accepting any impact of computers on the human reasoning process itself. Here the profession still cherishes the illusion of a neat dichotomy between the sanctity of human reason and the profanity of computer technology.

It is the purpose of this article to show 1) that legal reasoning and quantitative concepts do in fact intertwine, 2) that the linkage is not even new but can be documented in orthodox legal writings from pre-computer days to the present, and 3) that the use of computers can go beyond file clerk functions and add new dimensions to our view of law. It should therefore be normal and indeed necessary to treat quantitative notions as part of the phenomenology of law itself.

2. Magnitudes in Law

Quantitative notions begin their long-range effect even before law can be created. Legislators cannot be elected without counting votes and computing the required majorities. Once elected, they cannot make laws without an analogous process of vote counting. Important legislative actions require special majorities. This is a quantitative way of defining non-routine circumstances, e.g. overriding a presidential veto, impeaching a president or amending the constitution. It is obviously more difficult to achieve special majorities of 67% or 75% than to obtain the simple 50% plus one vote, and the increment in difficulty is a measure of how important the matter appeared to the framers of the constitution—whereby the degree of importance itself is again a quantitative concept.

Let us reverse the argument and imagine, hypothetically, that quantitative notions were suddenly removed from the body of law. It is difficult to see how law could continue to operate without them. We would lose such basic concepts as « compromise » in the legislative history of statutes because compromise itself implies quantitative differences between negotiating positions. Other, equally fundamental concepts would disappear from the effect of law on society. Any discussion of how law distributes benefits and burdens throughout society cannot help but use quantitative notions. One law shifts benefits between coastal regions and inland areas; another between capital and labor; a third between age groups; a fourth between private and public transportation; and any law, ultimately, makes some « measurable » difference in the lives of people—measurable in dollars and cents and negotiable among legislators.

Statutory law, the result of legislation, is replete with quantitative notions, e.g. speed limits for vehicular traffic, purity standards for food and drugs, proportion of pollutants in industrial effluents, stress limits for bridges, occupancy limits for buildings, age limits for drinking and voting, minimum wages and maximum work hours, and on and on.

Adjudication, too, has quantitative aspects. The goddess of justice in ancient Rome was depicted as holding a scale to weigh the evidence, and the symbol has been adopted and endorsed by many later legal systems all over the world. But we need not resort to folklore for evidence of quantification. The structure of the judiciary itself reveals quantitative concepts. The importance of the court correlates with the number of judges on the bench—from the single-judge traffic court to the nine members of the U.S. Supreme Court, with intermediate numbers for various appellate and special courts. In procedure, there are such quantitative concepts as majority or unanimity of jurors, preponderance of evidence, number of precedents and many more. As Chief Justice Marshall developed the basic idea of unconstitutionality in *Marbury vs. Madison* he used a quantitative distinction in a hypothetical example. It would be unconstitutional, he wrote, for a court to convict a person of treason on the testimony of one witness rather than two as required by the constitution. The substance of adjudication also shows a wide range of examples—comparative negligence, substantial performance, habitual domicile, irreparable damage—all turning on questions of degree, quantity, or relative weight in the interplay of several factors.

Finally, the result of a court's decision may appear in yes/no form (guilty/innocent, win/lose), but the impact often depends heavily on quantitative notions. In civil cases, the amount of money awarded by a court is an obvious example; in criminal cases, the amount of the fine or the length of the prison term. Quantitative notions linger on even beyond the courthouse in the aftermath of the legal process. Prison discipline and probation rely on tests expressed in quantitative terms, and even clemency and pardon stem from an awareness of the ultimate relativity of crime and punishment.

3. Quantification in International Law

If magnitudes are relevant to domestic law, we should expect the same also for international law. Its primary sources are treaties and custom accepted as law. Evidence for custom requires that a practice be long and continuous as well as shared by an overwhelming majority of countries—both quantitative concepts. Substantive rules of customary international law, likewise, abound with quantitative notions in critical places, e.g. effective and continuous occupation subsequent to discovery, the width of

the territorial sea, compensation for expropriation, proportionality of reprisals, unreasonable delay as denial of justice, substantial territory controlled by insurgents claiming recognition and a revolutionary government's effective control of a country.

Treaties contain quantitative concepts as often as statutes. The 1969 Vienna Convention on the Law of Treaties includes a wide variety of quantitative and quasi-quantitative notions in the procedures for the making and applying of treaties, for instance: « two-thirds » vote on a treaty text at an international conference (Article 9); conditions « similar » to ratification (Art. 18); « number » of parties in acceptance of reservations (Art. 20); « extent » of application of earlier treaty (Art. 30); general rule and « supplementary » means of interpretation (Art. 31 and 32); meaning which « best » reconciles texts in different languages (Art. 33); « essential » basis of consent (Art. 44 and 48); « manifest » violation and « fundamental » importance of a rule of internal law (Art. 46); « number » of remaining parties falling below number necessary for entry into force (Art. 55); « material » breach and « radical » change in terminating a treaty (Art. 60); « number » of conciliators and « length » of time periods in settlement procedures (Art. 66 and Annex) and « extent » of conflict with peremptory norm of general international law (Art. 71).

Quantitative concepts abound also in substantive provisions, e.g. most-favored nation clause, import and export quotas, expense sharing formulas, claims settlements, fair and reasonable avoidance of double taxation, military or civilian preponderance in use of atomic energy, definitions of dangerous goods, formulas for sharing multiple uses of international rivers and other resources, and innumerable lists of goods with quantitative limits in trade agreements and customs conventions.

International arbitration and adjudication also rely heavily on quantitative notions. Let us take some examples from one of the most often cited arbitrations, the *Island of Palmas* case (1928). Arbitrator Huber of the Permanent Court of Arbitration, who had just previously been President of the Permanent Court of International Justice (1925-1927) and was clearly one of the world's leading international lawyers in the inter-war period, used the following quantitative concepts in decisive parts of his award:

« The acts of... display of Netherlands sovereignty... are not numerous, and there are considerable gaps in... continuous display ».

« ... manifestations of sovereignty over a small and distant island... cannot be expected to be frequent [or going] back to a very far distant period ».

« ... sovereignty may be the outcome... of a progressive intensification of state control ».

« ... no evidence... of display of sovereignty over the island by Spain... such as might counterbalance... the manifestations of Netherlands sovereignty ».

« ... absence... of conflict... during more than two centuries... ».

« It remains now to be seen whether the United States [can] bring forward an equivalent or stronger title ».

« An inchoate title however cannot prevail over a definite title... ».

Another well-known arbitration is that of the Tinoco claims between Great Britain and Costa Rica (1923), in which the arbitrator was Chief Justice Taft of the United States Supreme Court. He used the following terms in decisive passages:

« Some 61,000 votes were cast for Tinoco and 259 for another candidate ».

« For a full two years Tinoco... administered... Costa Rica ».

« Undoubtedly recognition... is an important evidential factor... ». [List of 20 recognizing countries follows].

« ... non-recognition loses something of evidential weight... » [if not determined by factual inquiry but by policy].

« Such non-recognition cannot outweigh the evidence... ».

« Their action under the treaty could not be of more weight... than the policy of the United States, already considered ».

« Moreover... all the signatories but Nicaragua... ».

« The evidential weight of such non-recognition... ».

« To sustain this view a great number of decisions in English and American courts are cited... ».

« ... indicating a general acquiescence of nations in such a rule ».

Similar examples come from adjudication proper, namely, from the International Court of Justice. In the *Reparation for Injuries* case (1949), the ICJ referred to the United Nations as the « supreme » type of international organization, implying the relevance of a gradation among IGO's and leaving undecided the question of whether an IGO of a lesser grade would have « international personality » under otherwise similar circumstances. The ICJ reasoned in that case that the UN could not function if it had to involve « the concurrent action... of 58 or more Foreign Offices ». Would it have affected the ICJ's conclusion if only 20 or 10 or 3 foreign offices had been involved? Presumably so, or why else would the Court specify 58, which at that time represented most of the world's countries? We read later in the same case that

« the Court's opinion is that 50 States, representing the vast majority of the international community, had the power [to establish an objective international personality] ».

We may assume, again, if the UN had been established by less than 50 States (how many less?), or if 50 (or later 58) had been less than the overwhelming majority of all the States of the world (how much less?), the Court would have concluded differently.

Alternatively, let us assume that the ICJ, as one of the six principal organs of the UN, wanted to come to a pro-UN decision if at all legally possible, and to support that decision with the best possible argument. In that case, the example shows that the Court chose a quantitative argument to support a unanimous decision that was institutionally important to the whole UN structure including the Court itself. Both assumptions lead to the notion that magnitudes are relevant to judicial decisions in international law.

Space permits only a few examples from other ICJ cases, merely to show that the *Reparation for Injuries* case is not exceptional in its reliance on quantitative notions.

Corfu Channel case (merits): The volume and multinational composition of traffic in the channel helped the Court determine that it was an international waterway: « During the period of one year nine months, the total number of ships was 2,884. The flags of the ships are Greek, Italian, Roumanian, Yugoslav, French, Albanian and British ». « These figures... do not include the large number of vessels which went through the Strait without calling at Corfu at all » (ICJ Reports, 1949, p. 29).

Asylum case: The existence of regional international customary law for the Americas depended in part on quantitative evidence as to its uniformity within the Western Hemisphere: « The Convention of 1933 has... been ratified by not more than 11 States and the Convention of 1939 by 2 States only » (ICJ Reports, 1950, p. 277).

Rights of U. S. Nationals in Morocco case: The intention of France and the practice of other States to abolish foreign extraterritorial rights were found by the Court to be evident from: « ... agreements negotiated by France with some 20 foreign States... » and « ... eleven of the [12] Powers have abandoned their capitulatory privileges... ». Also, in US-French correspondence the Court contrasted « isolated expressions » with the « general tenor » (ICJ Reports, 1952, pp. 195, 197, 200).

Voting Procedure case (Advisory Opinion, Judge Lauterpacht's Dissenting Opinion): The Court considered « degree of supervision » a substantive question unrelated to the voting procedure by which the UN General Assembly could exercise that supervision, for instance, by unanimity, two-thirds majority, or simple majority. Judge Lauterpacht disagreed: « ... the less exacting method of voting adds to the stringency and the degree of supervision... » and « The procedure of voting determines the degree of supervision » (ICJ Reports, 1955, pp. 94-95).

Temple case (merits): One major issue was the notoriety of certain maps which could have prompted Siam (Thailand) to protest against the boundary as shown

on those maps relied on by Cambodia: « The full original distribution consisted of about 160 sets of 11 maps each. Fifty sets... were allocated to the Siamese Government » (ICJ Reports, 1962, p. 23).

South West Africa case (second phase, 1966): In reviving a jurisdictional issue from the preliminary phase to bar consideration of the merits, the Court relied on the frequency and normalcy of League practice to solve Mandate-related questions politically rather than judicially: « ... in the 27 years of the League, all questions were... resolved by the Council; ... and no cases were referred to the Permanent Court... » (ICJ Reports, 1966, p. 45). Judge Jessup's much-cited dissent argued for an evaluation on the merits and was concerned with « measuring » the degree of performance by South Africa of its obligations as Mandatory: « In my opinion, such a standard exists and could have been... utilized by the Court in... measuring... the Mandatory's obligation... » (ICJ Reports, 1966, p. 433).

Continental Shelf case: As in the *Asylum* case, the Court had to decide at what point treaty law mirrors a practice so uniform as to constitute customary international law and said in reference to the Geneva Convention on the Law of the Sea: « ... the number of ratifications and accessions... is, though respectable, hardly sufficient » to convert a conventional rule into a general rule of international law. Quantitative notions abound also in the numerous references of the Court to « just and equitable shares » of the continental shelf (ICJ Reports, 1969, p. 42 *et passim*).

Barcelona Traction case: The Court relied on frequency to show that non-Belgian diplomatic protection for Barcelona Traction was available: « ... the Canadian Government made numerous representations... » and to contrast the lack of Belgian treaty rights in this case with normal contemporary practice: « States ever more frequently provide for such protection [of foreign investment]... in the form of multilateral or bilateral treaties... » (ICJ Reports, 1970, pp. 44, 47).

In spite of all the cited examples in domestic and international law it can be argued, nevertheless, that quantitative notions are relevant only to the *content* of law, but not to its *existence*. It is one thing, for instance, to see the relevance of quantity in a claims settlement, but it is quite another to count the number of claims settlement treaties and to impute to that number some significance for our understanding of international law. And yet, that precisely is one claim on which a key argument of this article depends.

Let us call the two kinds of quantification « exegetical » and « existential ». Where non-legal facts are counted (e.g. ships in the Corfu Channel), quantification is exegetical. Where elemental particles of law themselves are being counted (e.g. treaties, court cases), quantification is existential. Both types of quantification occur in the cited examples, and there are also some hybrid types. The extent of UN membership, as used by the ICJ in the *Reparation for Injuries* case, shows existential quantification for exegetical purposes. So is the number of ratifications of the

Havana Convention in the *Asylum* case, and of the Geneva Convention in the *Continental Shelf* case, but we need not limit ourselves to court cases.

Quantification goes beyond jurisdiction. International law is more than a set of tools with which to win (or lose) a case in court. There is existential quantification in much of our thinking and writing about international law, and always has been from the pre-Grotians to the present. Numbers play a key role in any theory of relevance. Academic and governmental discussion of international legal topics ebb and flow with the number of external events that prompt the discussions—expropriation, hijacking, terrorism, oil embargo, war crimes, micro-statehood, space satellites—the list is endless and the correlation is nearly perfect. Large numbers translate into importance, small numbers into triviality. Andorra and San Marino were once mere footnotes in international law texts, but the advent of dozens of very small States, with the prospect for more to come, has turned a quaint legal fossil into a live issue on UNITAR's agenda. The small number of cases at the International Court of Justice is widely considered as a sign of its political irrelevance. The growth in numbers and functions of international organizations is widely viewed as one of the key features of modern (as distinct from classical) international law. The number of reservations, and objections to reservations, in multilateral conventions is a measure of the cumbersomeness of the international law-making process, and of the importance of the problem. That list, too, can be extended over the whole range of international law.

The curious fact remains that the relevance of magnitudes in international law has often been given its due in concrete cases, but it has not been recognized as having theoretical significance for our understanding of international law as a whole. Therefore, there is no general inventory of quantifiable data in international law, comparable in dependability and sophistication to international trade statistics, international gold flow figures, foreign aid accounts, production and consumption indices, population growth rates and many other statistical data which allow us to measure and thence better understand other aspects of public life on our planet. In fact in international law we have not even reached the point where we take it for granted that a basic inventory of facts and magnitudes is both necessary and available. This article and the facts and figures of the sample treaty profiles on the last pages are offered as a step toward reaching that point.

4. Treaties and Theories

The theoretical linkage between law and politics in world affairs is usually discussed in terms of the effectiveness (or ineffectiveness) of law in controlling governmental behavior. From the popularized interest in whether

international law « works » to the various civic and scholarly efforts at achieving « world peace through law » and policy analyses in terms of « world public order » and « relevant utopias »—they all have in common the use of international law as an instrument of policy.

The law/politics linkage is seen here in a radically different way. International law is being used here not as a means of social control but as a means to learn more about the real world of international politics; not as social action, but as social theory. International law serves as a mirror of international society, just as domestic law can serve as a mirror of domestic society. If all books and all human memories about American history were suddenly lost, we could still reconstruct a reasonably accurate image of American history with nothing but a complete record of all cases decided by the Supreme Court of the United States. There is more than law in the records of the Supreme Court, from *Marbury vs. Madison* to *United States vs. Nixon.* What emerges from the cases is a « constitution » in a very broad sense. It is a constitution as a framework for social behavior, a description of the rules of the game, a definition of normalcy and aberration—in short, a general theory of American government and society.

What is the international analog for that image? Is it the World Court (ICJ)? Both courts make legally unreviewable decisions for their respective realms—the Supreme Court for America and the ICJ for the world. But, intuitively, the analogy seems weak. Why? Technical reasons immediately come to mind. The ICJ has no comparable enforcement mechanism, and consequently it has neither the effect on world politics nor the standing in world society that the Supreme Court has in American life. The ICJ has no appellate jurisdiction and hence no indirect effect on adjudicatory processes world-wide. The ICJ has no jurisdiction over individuals, and therefore its judgments lack the down-to-earth quality of Supreme Court decisions. Many more examples—all true—could be cited, yet they too would fail to give an instant image of the overwhelming difference between the two courts as mirrors of their realms.

The starkest statement of the difference is quantitative. During the first two post-war decades the ICJ decided 22 contentious cases and gave 12 advisory opinions, which averages out at less than 2 decisions per year. During the same time the U.S. Supreme Court decided an average of about 200 cases per year. The decisional activity of the Supreme Court thus relates to that of the International Court as 100:1. No wonder, then, that Supreme Court jurisdiction renders a fine-screen image while the International Court shows only a few gross strokes.

If not the International Court, what else? Let us try treaties. Again, we can find all sorts of good qualitative reasons why treaties are better than ICJ cases in mirroring world politics. Most textbooks list treaties first

and judicial decisions last among the sources of international law. Article 38 of the ICJ Statute goes so far as to relegate judicial decisions to « subsidiary means for the determination of rules of law ». Treaties always prevail over custom, even among the traditional countries which have no quarrel with the notion of custom itself. Revolutionary governments and ex-colonial countries challenge custom as a source of international law, but they always agree to be bound by treaties they made themselves and often also by treaties made by their predecessors.

All this is true, but the really telling point is again quantitative. One unmistakable sign of political reality is hectic activity. The 34 ICJ decisions in 20 years are anything but hectic. During the same time the States of the world made over 12,000 treaties, over 600 per year; compared to ICJ decisions this is a rate of 300:1. Here, then, we may find a fine-screen image of world politics comparable to the Supreme Court image of American life and politics.

Quantitative analysis is more than crude magnitudes. What matters is not only the gross total but also its various components and how they relate to each other. The 12,000 treaties might be perceived symbolically as so many bricks which, together, make up the temple of international law. Lest laymen be too impressed with the simile, let us hasten to add that the 12,000 treaties do not fit together in any neat pattern. They resemble much less a systematic framework than a random patchwork. But that, precisely, is what mirrors reality. Let us imagine a world map with as many lines drawn between capital cities as there are bilateral treaty links between them. That map would show wildly uneven densities. Washington, Moscow, Paris, London, Bonn and Peking would be covered by a jungle of lines coming and going in all directions. Some newer and smaller countries would barely show a few lines. Similar unevenness would appear in lines between *pairs* of capital cities. Washington-Ottawa, Moscow-Peking, Bonn-Paris, London-Rome, and various permutations among leading treaty-makers would be thick with dozens of overlapping lines. On the other hand, about three-quarters of all possible country pairs in the world would show a total of *zero* mutual bilateral treaties.

This patchwork pattern of treaties represents not only international law but also world affairs in general much better than the artificial and ineffective neatness of the International Court. The patchwork is global in scope but riddled with gaps, vivid in contrasts and yet repetitive within any one pattern, confusing in its appearance and yet undeniable in its existence—all in all a truly multidimensional image of world politics.

Of course, treaties are not the only formal interactions among States which scholars can quantify to construct a theoretical model of the international system. David Singer has reviewed and partly reproduced

some of the other efforts in *Quantitative International Politics* (1968). The common purpose of all these efforts has been to improve upon the truisms about world affairs which we professionals share with college-educated laymen. Such improvements are not negligible, to be sure, and they are worth preserving through archives, worth enlarging through research and worth transmitting through teaching to future generations. But one thing they are clearly not—they are not a body of theory as that term is understood in the natural sciences, or as theory-building was understood among internationalists during the optimistic 1960's. It is « theory » only in the etymological sense of the Greek root of the word—« observation and contemplation ».

Our theoretical models of the international system, likewise, are not « models » in the sense of the natural sciences; they do not isolate effective causes or predict future behavior. And yet our models are no idle games. They fulfill one important function quite well. They reduce the size and chaos of the real world to human scale, and to some minimal orderliness, so that we can in fact observe and contemplate the international system. In constructing such models the builder has to decide what data to use as building blocks, and in this particular case to answer the question: Why treaties? It might be enough to answer: Why *not* treaties? After all, there is no exclusiveness about the various international data that can be used and have been used for model building, e.g. UN votes, diplomatic visits, mail flow, trading patterns, press coverage, and so forth. Each data user, in a much-cited simile, is like one of the blind men touching a different part of the elephant and assuming that the part represents the shape and nature of the whole animal (i.e. the international system). So, why *not* treaties? There is, however, a more affirmative answer. Treaties optimize three crucial conditions if we use them as « shadows » of the not-directly-observable reality outside our Platonic cave: 1) universality, 2) meticulosity and 3) parsimony.

Universality applies in two ways—as comprehensiveness and as standardization. All countries make treaties, and treaty formats and procedures are remarkably similar all over the world. Hence the products are in fact standardized, easily comparable and globally quantifiable within a single consistent system.

Meticulosity is assured by the lawyers who draft the treaties and by the importance attributed by all participants to the treaty-making process. Unlike UN votes, press coverage, private trade, tourism and many other factors, there is little or nothing left to chance in the making of treaties. Every treaty is a deliberate governmental act, slowly and carefully prepared, and self-consciously put into the space/time framework of all other relations with the treaty partner. This is not to deny the occurrence of random negligence in governmental actions (including treaties) and

indeed in human activities in general, but the treaty-making process is about as far on the meticulous end of the scale as any set of events that is relevant to the international system.

Finally, there is parsimony. The treaty-making process itself is a filtering device. It represents all the relevant forces in government, and each is careful to avoid unnecessary commitments and indeed to question the need for the treaty itself. Thereby, the trivia and the petty impulses which abound in other events between nations (ceremonial matters, verbal praise and blame, etc.) tend to get filtered out of the treaty-making process. State Department Circular 175 of 22 December 1955 (as revised by Public Notice 396, *Federal Register*, 15 August 1973) shows in abundant detail how many different units of government must cooperate in developing an institutional consensus for a treaty. Then the process still needs the endorsement of the chief executive, and that brings in all the familiar opportunities for lateral inputs at the White House level. And even that may not be the end. Foreign relations is the only political game where the buck does not stop at the President's desk. If the foreign partner objects to anything in the draft treaty, the whole process must be reiterated throughout the domestic constituencies and the foreign negotiation.

Admittedly, the American example may be an extreme case, due to the sheer size and the fiercely competitive sub-cultures of our pluralistic establishment, but most of the other major treaty-makers are also large countries with complex governments. Even non-democratic governments have to reconcile the interests of various established fiefdoms in their internal treaty-making processes, and of course they all face the same complexities as democratic governments in their external negotiations. Ultimately, then, any treaty which emerges from these political wind tunnels has been buffeted by so many different influences that it represents, most parsimoniously, the *total* policy output with which the treaty-making country addresses its treaty partner, and vice versa.

The major argument against treaties as data is that they are fragile. True, treaties can be and have been broken. In fact, governments over the centuries have devised and perfected many clever ways of extricating themselves from uncomfortable treaty obligations, usually without resorting to the crudeness of breakage. Treaties can be re-interpreted. They can be partially of fully suspended and of course formally terminated. Moreover, any country can ask at any time to negotiate for an amendment to a treaty. And, finally, treaties can be quietly ignored—a trick which governments use with consummate skill in many fields. So, breakage is by no means the only cause of ineffectiveness of a treaty, and all these causes together appear to make a strong argument against the use of treaties as data.

The anti-treaty argument may apply to any one treaty but not to the aggregate pattern of all treaties. There is safety in numbers. Something happens as we change focus from a single datum to a massive data bank. Any one treaty can be ignored or violated, and by itself that would tend to distort the image, but the distortions cancel out in the aggregate. Immortal like government itself, despite the human mortality of those who govern, treaties as a class survive their own individual deaths. What replaces an *old* treaty, invariably, is a *new* treaty. Even a partial change of an old treaty involves the machinery of treaty-making and often takes the form of a separate treaty, amending the prior one, and thus enters the data bank and reflects the reality of post-treaty politics between the two countries. Even treaty silence becomes conspicuous in the aggregate. A single non-treaty is of course invisible but if a country's total treaty profile has lows or gaps where regular treaty activity would normally be expected, those gaps are clues about some unusual political situations.

All in all, then, treaty data can tell us a lot about the world around us but we must learn to repress in ourselves the conditioned reflexes of international lawyers and to look beyond exegesis. A « treaty profile » is an instrument of observation, but it is more like a telescope than a microscope—bringing broader vistas of international law into our range of perception. Any one treaty becomes trivial in this broad perspective. What counts is the pattern of how hundreds and thousands of treaties combine and re-combine in the ever-changing game of world politics as it is being played by real people with real power.

Whether a « treaty profile » is (or has) an implicit theory of international politics is a question of terminology, not substance. But whether it can compete with other academic « blind man's images » of the « elephant » of world politics—that is a question which *can* be answered, and the best way to answer it is to experiment with a real treaty profile. At the end of this article is a copy of the treaty profile of the world for the first two post-war decades, 1946-1965. Analogous profiles exist for each of the major regions of the world (African, Arab, Asian, etc.), and for every national government, all available in *Treaty Profiles*, as cited in the headnote of this article. Full explanations of the lines and columns in the standard profile are given there, but enough of it is self-explanatory so that it can be used by various researchers in international law and politics to illustrate the theoretical argument of this article with empirical facts.

For example, the world treaty profile lists countries in a hierarchy of treaty frequency. This information is relevant to many discussions about a country's status, recognition and diplomacy, but there is no other way to find it without a prohibitive amount of work. That in turn means that

Partners	Partner's World Total	Dyads			Time			
		Absolutes	Ratios Self	Ratios Other	1946 1950	1951 1955	1956 1960	1961 1965
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
TOP THIRTY								
1 USA (United States)	2599	63	8%	2%	17	22	14	10
2 France	1033	62	8%	6%	13	19	20	10
3 Switzerland	426	41	5%	10%	5	11	15	10
4 UK Great Britain	981	40	5%	4%	14	13	8	5
5 Yugoslavia	525	38	5%	7%	11	6	13	8
6 Austria	445	28	4%	6%	7	13	5	3
7 Germany, West	890	25	3%	3%		10	6	9
8 Belgium	499	24	3%	5%	8	9	3	4
9 Netherlands	548	23	3%	4%	3	10	8	2
10 USSR (Soviet Union)	1356	19	3%	1%	6		9	4
11 Spain	437	19	3%	4%	2	3	13	1
12 Turkey	298	18	2%	6%	4	5	3	6
13 Argentina	164	17	2%	10%	4	2	7	4
14 Brazil	195	16	2%	8%	4	2	8	2
15 Sweden	483	15	2%	3%	7	4	3	1
16 Poland	493	14	2%	3%	1		5	8
17 Greece	318	14	2%	4%	4	6	2	2
18 United Arab Rep	232	12	2%	5%	1	1	6	4
19 Norway	461	11	1%	2%	5	3	2	1
20 Denmark	380	11	1%	3%	3	4	3	1
21 Australia	201	11	1%	5%	3	5	2	1
22 IBRD (World Bank)	452	8	1%	2%		3	4	1
23 Canada	310	8	1%	3%	2	3	1	2
24 Tunisia	97	7	1%	7%		1	2	4
25 Monaco	36	7	1%	19%		1	4	2
26 Mexico	138	7	1%	5%	1			6
27 Israel	232	7	1%	3%		5	1	1
28 Iran	170	7	1%	4%	1	1	5	
29 Czechoslovakia	393	7	1%	2%	2		2	3
30 Albania	125	7	1%	6%			5	2
31 All Others (67)	6627	169	22%	3%	34	30	47	58
GROUPS								
32 African Group	968	21	3%	2%			6	16
33 Arab Group	937	43	6%	5%	4	7	14	18
34 Asian Group	1937	29	4%	1%	6	4	14	6
35 Commonwealth	1641	67	9%	4%	21	25	12	9
36 Communist Group	3310	61	8%	2%	12		25	24
37 Latin America	1674	77	10%	5%	22	12	23	20
38 Western Europe	5906	325	43%	6%	68	105	96	56
39 Intl Organs	1399	18	2%	1%	1	4	6	7
TOTALS								
40 All Data	21544	755	100%		162	192	226	176
41 UNTS Only		322						
COMPARISONS								
42 Party Total					21%	25%	30%	23%
43 Group Total					22%	25%	27%	26%
44 World Total					18%	23%	29%	29%

Topics					Institutions					
Admin & Dipl	Social Coop	Econ Coop	Aid	Milit	UN	Spec Ag's	Intl Court	Arbi-tration	Other	Self-Regis-tered
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
9	7	7	21	19	4	5	3	1	8	3
13	28	15		6			2		5	13
12	16	12	1			1	1	2	7	9
12	10	12	1	5	5	2	1	1	6	1
16	8	9		5		1		1	6	4
10	10	7		1		2		1	3	6
5	10	7	1	2					6	4
6	15	2		1					4	1
4	10	5		4	1	1			8	1
6	2	10		1					1	
	10	9							1	4
2	2	10	4			1	1		1	
1	9	5	2						1	2
4	4	4	1	3			1	1	1	2
1	3	11								1
1	4	8	1							
3	4	6		1		3		1	11	1
2	2	6	1	1					2	2
1	2	8						1	3	2
1	1	8		1					11	3
2	4	1	1	3	3	1		2		
			8							
3	3	1		1						
	3	2	2						5	2
2	4			1					1	3
2	1	2	2							
3		4								
2	1	4				1				2
2		4	1							
1	2	2		2						1
51	41	45	19	13	7	9	7	3	8	18
4	6	3	7	1						1
8	11	15	8	1		1	1		9	9
9	5	12	1	2		3	2	1	3	4
19	19	16	2	11	10	3	1	3	6	1
10	11	34	3	3					2	4
22	20	20	7	8			2	1	3	8
68	126	106	6	19	1	10	4	6	62	50
6	1		11		4	3	3			
177	216	226	66	70	20	27	16	14	99	85
23%	29%	30%	9%	9%	6%	8%	5%	4%	31%	26%
24%	26%	32%	10%	8%	4%	14%	6%	8%	17%	32%
22%	25%	25%	20%	7%	8%	12%	6%	7%	12%	100%

Partners	Partner's World Total	Dayds			Time			
		Absolutes	Ratios Self	Ratios Other	1946 1950	1951 1955	1956 1960	1961 1965
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
TOP THIRTY								
1 USA (United States)	2599	686	9%	26%	194	203	169	120
2 Germany, West	890	431	5%	48%	27	132	151	121
3 France	1033	430	5%	42%	102	98	114	116
4 UK Great Britain	981	405	5%	41%	127	102	94	82
5 Italy	755	325	4%	43%	68	105	96	56
6 Belgium	499	292	4%	59%	92	86	74	40
7 Sweden	483	274	3%	57%	110	90	56	18
8 Netherlands	548	274	3%	50%	72	95	74	33
9 Switzerland	426	260	3%	61%	53	78	79	50
10 Spain	437	247	3%	57%	26	44	112	65
11 Austria	445	232	3%	52%	36	81	65	50
12 Norway	461	222	3%	48%	75	58	58	31
13 USSR (Soviet Union)	1356	211	3%	16%	63	38	76	34
14 Denmark	380	167	2%	44%	60	38	38	31
15 Yugoslavia	525	163	2%	31%	29	36	57	41
16 Greece	318	134	2%	42%	35	58	19	22
17 Turkey	298	126	2%	42%	41	31	34	20
18 Finland	245	101	1%	41%	25	32	25	19
19 Canada	310	101	1%	33%	37	23	25	16
20 Luxembourg	136	94	1%	69%	23	20	20	31
21 Poland	493	89	1%	18%	29	10	18	32
22 IBRD (World Bank)	452	86	1%	19%	17	23	27	19
23 Japan	443	85	1%	19%	4	32	34	15
24 Czechoslovakia	393	80	1%	20%	43	10	9	18
25 Israel	232	78	1%	34%	2	39	19	18
26 Brazil	195	74	1%	38%	16	12	30	16
27 Australia	201	72	1%	36%	16	27	17	12
28 Portugal	131	70	1%	53%	22	14	19	15
29 Ireland	103	69	1%	67%	29	21	13	6
30 Argentina	164	63	1%	38%	22	4	20	17
31 All Others (135)	9216	1898	24%	21%	259	378	491	770
GROUPS								
32 African Group	968	330	4%	34%		8	55	267
33 Arab Group	937	288	4%	31%	42	44	91	111
34 Asian Group	1937	390	5%	20%	68	96	122	104
35 Commonwealth	1641	675	9%	41%	202	186	161	126
36 Communist Group	3310	579	7%	17%	164	84	167	164
37 Latin America	1674	442	6%	26%	70	116	133	123
38 Western Europe	5906	3866	49%	65%	922	1114	1066	764
39 Intl Organs	1399	227	3%	16%	44	55	49	79
TOTALS								
40 All Data	25148	7839	100%		1754	2018	2133	1934
41 UNTS Only		4303						
COMPARISONS								
42 Party Total					22%	26%	27%	25%
43 Group Total					22%	25%	27%	26%
44 World Total					18%	23%	29%	29%

Topics					Institutions					
Admin & Dipl	Social Coop	Econ Coop	Aid	Milit	Un	Spec Ag's	Intl Court	Arbi-tration	Other	Self-Regis-tered
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
76	97	138	181	194	41	81	30	9	98	59
157	128	111	7	28		14	4	12	23	113
118	157	124	5	26		9	7	10	37	105
122	85	121	18	59	10	46	19	20	104	52
68	126	106	6	19	1	10	4	6	62	60
108	89	73	6	16		10	5	6	38	25
45	58	168	1	2	1	13	7	9	14	52
79	83	88	2	22	2	14	3	11	70	43
71	87	96	3	3		14	4	9	14	55
27	109	110	1			5		7	9	37
92	70	67	2	1		10		8	20	62
53	42	111	6	10		14	1	13	31	46
70	44	84	7	6	1	1		1	10	29
28	37	95	1	6	2	13	2	8	39	37
53	48	55	2	5	2	11	7	11	23	33
17	29	81	3	4	1	15	1	8	57	20
22	26	58	20			9	1	3	13	26
26	23	50	1	1	1	8	4	7	6	37
29	22	23	3	24		13	1	7	7	14
28	44	16	2	4		12		4	5	42
4	29	53	2	1		1			11	26
1			85			1	2	11		
29	15	36	1	4		12	5	4	3	17
8	20	47	2	3		8		6	9	27
36	14	25	1	2	1	7	4	4	3	11
20	25	22	4	3		7	2	9	2	16
25	20	16	3	8	4	9	1	4	2	7
11	28	30	1			11		7	9	26
18	21	29		1		12		9	9	12
6	27	22	2	6		4			2	15
503	538	577	221	59	70	189	103	129	65	375
66	89	92	73	10	2	20	12	15	3	62
60	112	77	35	4	3	52	11	33	20	77
93	125	112	41	19	8	60	22	36	13	75
204	160	189	24	98	17	76	21	31	114	90
102	149	302	13	13	2	12		8	42	136
124	124	150	28	16	2	33	6	22	5	83
1016	1184	1452	68	146	8	204	44	146	462	825
61	24	4	132	6	37	15	34	33	9	10
1950	2141	2632	599	517	137	583	217	352	795	1479
25%	27%	34%	8%	7%	3%	14%	5%	8%	18%	34%
24%	26%	32%	10%	8%	4%	14%	6%	8%	17%	32%
22%	25%	25%	20%	7%	8%	12%	6%	7%	12%	100%

Partners	Partner's World Total	Dyads			Time			
		Absolutes	Ratios Self	Ratios Other	1946 1950	1951 1955	1956 1960	1961 1965
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
TOP THIRTY								
1 USA (United States)	2599	2599	20%	100%	575	743	599	682
2 USSR (Soviet Union)	1356	1356	11%	100%	251	221	596	288
3 France	1033	1033	8%	100%	225	198	243	367
4 UK Great Britain	981	981	8%	100%	282	234	221	244
5 Germany, West	890	890	7%	100%	32	229	286	343
6 China People's Rep	766	766	6%	100%	33	186	253	294
7 Italy	755	755	6%	100%	162	192	226	175
8 Germany, East	556	556	4%	100%	40	152	214	150
9 Netherlands	548	548	4%	100%	156	167	132	93
10 Yugoslavia	525	525	4%	100%	129	100	174	122
11 Belgium	499	499	4%	100%	146	139	131	83
12 Poland	493	493	4%	100%	111	76	167	139
13 Sweden	483	483	4%	100%	191	143	107	42
14 Norway	461	461	4%	100%	132	106	134	89
15 IBRD (World Bank)	452	452	4%	100%	42	97	137	176
16 Austria	445	445	3%	100%	56	130	135	124
17 Japan	443	443	3%	100%	7	132	156	148
18 Spain	437	437	3%	100%	51	104	182	100
19 Switzerland	426	426	3%	100%	98	116	121	91
20 Czechoslovakia	393	393	3%	100%	117	55	133	88
21 Denmark	380	380	3%	100%	117	98	93	72
22 Greece	318	318	2%	100%	82	110	65	61
23 Canada	310	310	2%	100%	90	73	80	67
24 India	299	299	2%	100%	45	82	85	87
25 Turkey	298	298	2%	100%	87	77	80	54
26 Hungary	290	290	2%	100%	72	41	100	77
27 Romania	251	251	2%	100%	51	44	92	64
28 Pakistan	245	245	2%	100%	41	68	72	64
29 Finland	245	245	2%	100%	61	59	63	62
30 Philippines	236	236	2%	100%	66	54	47	69
31 All Others (168)	8051	8051	63%	100%	1150	1732	2188	2981
GROUPS								
32 African Group	968	975	4%	101%	12	51	175	737
33 Arab Group	937	953	4%	102%	86	228	293	346
34 Asian Group	1937	2062	8%	106%	335	464	645	618
35 Commonwealth	1641	1725	7%	105%	467	426	419	413
36 Communist Group	3310	4765	19%	144%	765	899	1847	1254
37 Latin America	1674	1731	7%	103%	312	448	430	541
38 Western Europe	5906	7839	31%	133%	1754	2018	2133	1934
39 Intl Organs	1399	1485	6%	106%	202	352	350	581
TOTALS								
40 All Data	25464	12732	100%		4698	5958	7312	7496
41 UNTS Only		7980						
COMPARISONS								
42 Party Total					18%	23%	29%	29%
43 Group Total								
44 World Total					18%	23%	29%	29%

Topics					Institutions					
Admin & Dipl	Social Coop	Econ Coop	Aid	Milit	UN	Spec Ag's	Intl Court	Arbi-tration	Other	Self-Regis-tered
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
324	497	342	873	563	127	208	76	38	233	2308
354	309	368	283	42	7	6		4	46	197
277	346	266	58	86	13	44	23	22	59	77
243	213	283	105	137	39	123	40	47	145	700
223	222	264	107	74	5	37	14	28	61	
104	271	311	73	7	1				3	
177	216	226	66	70	20	27	16	14	99	85
99	227	178	44	8	1				8	
136	163	155	37	57	17	58	27	35	95	277
111	153	154	81	26	13	18	14	26	74	153
168	137	123	28	43	4	29	22	13	69	327
86	198	134	62	13	10	6	1	3	50	92
77	109	277	11	9	7	47	19	26	25	108
127	97	182	21	34	4	43	16	30	57	110
4		3	445		2	9	3	24	4	449
172	118	111	33	11	6	24	5	17	38	39
115	88	120	77	43	15	55	26	20	22	96
79	166	162	21	9	4	14	2	15	13	
103	132	172	14	5	2	50	20	36	20	1
82	155	127	17	12	4	24		13	35	95
58	98	177	17	30	10	50	12	24	64	192
49	66	147	27	29	7	32	9	17	94	147
72	81	72	20	65	2	34	6	15	39	125
40	67	66	108	18	16	34	17	20	16	26
53	55	100	74	16	7	25	6	13	27	13
64	106	96	11	13	9	3		6	21	63
59	104	64	17	7	9	1	1	3	20	58
57	62	42	74	10	19	52	23	19	11	55
67	46	98	27	7	8	17	9	15	13	42
73	50	30	52	31	9	14	12	8	5	41
1901	1908	1510	2319	413	915	766	509	585	396	1275
211	209	177	343	35	107	77	58	88	24	6
169	264	211	274	35	84	124	47	90	52	32
452	474	412	580	144	140	202	114	115	82	238
414	428	475	169	239	61	226	60	77	201	1038
960	1621	1457	618	109	48	42	2	32	223	518
289	441	321	528	152	92	125	59	82	92	91
1950	2141	2632	599	517	137	583	217	352	795	1479
350	101	15	1003	16	394	169	186	206	54	1056
5554	6460	6360	5202	1888	1312	1850	928	1136	1862	7151
22%	25%	25%	20%	7%	8%	12%	6%	7%	12%	45%
22%	25%	25%	20%	7%	8%	12%	6%	7%	12%	100%

it would probably not be done, and instead the reasoning process itself would be adapted to what can be done, or guesswork and unsupported allegations would take the place of empirical facts and legal arguments. It is in this sense that the availability of data has an effect on the mode of research and on the intellectual process itself. If this is true for such a simple example as the hierarchy of treaty frequency, it is all the more true for any of the more complex operations that can be performed on the basis of the world treaty profile. For example, treaty trends over time (Columns 6-9) show in the broadest sense something like the rise and decline of civilizations, and, more realistically, the broad vision can be particularized for any one country or any group of countries, and can also be correlated with treaty topics (Columns 10-14) and with textual references to international institutions (Columns 15-19).

Sample profiles for Western Europe and Italy appear also at the end of this article. They supply many further details for regional and national studies [1]. The framework is the same, and hence comparisons are easy to make, but rankings and numbers vary from country to country. Also, where the world profile is necessarily blank (Line 43) or repetitive (Column 5), the regional and national profiles show new and different figures. All this information is otherwise unavailable or only anecdotal and unsystematic.

As scholars become familiar with these and similar quantitative data, a new style of research may emerge and with it new ways of thinking about international law and world politics. At the very least, there will be a material base for macroscopic, quantitative studies. For many other purposes, of course, the traditional view of international law will continue to satisfy the needs of scholars and government lawyers alike. Wherever it is a matter of seeking a negotiating advantage, drafting a treaty, submitting a dispute to a court or to arbitration, extending diplomatic protection to citizens abroad, or doing any of the other things that government legal offices do in their normal workload, they will continue to use traditional sources and apply traditional methods and thought patterns. Scholars, similarly, will continue to comment on governmental action according to traditional criteria and normal professional habits. Quantifiers and computer users have no quarrel with that at all. We do not want to « revolutionize » the profession. We simply want to create *additional options* for those situations where a scholar or a government lawyer may want to go beyond the normal pathways of research and to experiment with new ways of thinking about old problems.

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1. See for example JOHN L. PANATTONI, *Bilateral Treaties and Italian Foreign Relations, 1945-1965*, « Il Politico », Vol. 39, No. 3 (1974), pp. 451-488, with numerous references to other quantitative treaty studies.