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Negotiation arithmetic: adding and subtracting issues and parties  James K. Sebenius

A common approach to the analysis of negotiation commences with a given set of parties, a given set of issues, and the parties' fixed value or preference orderings for different possible settlements of the issues. Within this framework, theorists have investigated a wide class of negotiation phenomena: cooperative moves in reaching jointly beneficial settlements, situations of pure conflict, commitments, threats, promises, and so forth.

In this article I seek to complement such work with an investigation of the proposition that the issues and parties themselves are often important choice variables in negotiation. For example, agendas must be tacitly or explicitly adopted by a process of adding and subtracting issues. The original issues may change during the course of negotiation, often as the result of conscious moves. Similarly, the parties may change. Two children may noisily argue over a single ice-cream cone found in the freezer. Their choice to involve a parent, whose interest they hope lies in a silent settlement, may produce funds for a second cone (but does risk angry confiscation of the first one).

These cases represent but a few simple examples of the class of strategic moves to select or alter the parties and issues in a negotiation. Consideration of the purposes, methods, and results of such moves can offer a common framework for analysis of such diverse aspects of the negotiation process as issue linkage and the setting of "bottom lines." Under the rubric of adding and subtracting parties and issues, a number of general propositions emerge.

Five views on issue linkage give some perspective to the discussion. William Wallace sounds a dominant theme in modern writings on the subject when he notes that "Linkage between unrelated or only loosely-related issues in order to gain increased leverage in negotiation is an ancient and accepted

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aspect of diplomacy."1 Roger Fisher, however, sounds a note of caution. "The joining of issues as leverage or bargaining currency even when constructively looking toward a negotiated agreement," he writes, "tends to shift the focus away from the merits of a problem and to put relative bargaining power in issue."2 Robert Tollison and Thomas Willett have recently suggested an alternative rationale for linkage that offers a challenge to which I seek to respond in this article.

Our theory stresses issue linkage as a means of overcoming distributional obstacles to international agreement where direct side payments among countries are not a politically feasible alternative. The mutual benefit theory contrasts with and supplements the traditional rationale for linkage in terms of extending one’s leverage in one area to other areas. Integration of these two approaches . . . is an important task for future research.3

Kenneth Oye provides a complementary challenge when he observes that "aside from observing what linkages have been constructed in the past, no clear criteria have emerged for predicting patterns of issue linkage."4

While linkage has attracted attention from analysts over the last two decades, however, its consideration is by no means a modern phenomenon. I find the approach I develop here presaged in the wise words of Francois de Calvières, writing in 1716.

An ancient philosopher once said that friendship between men is nothing but a commerce in which each seeks his own interest. The same is even truer of the liaisons and treaties which bind one sovereign to another, for there is no durable treaty which is not founded on reciprocal advantage, and indeed a treaty which does not satisfy this condition is no treaty at all, and is apt to contain the seeds of its own dissolution. Thus, the great secret of negotiation is to bring out prominently the common advantage to both sides and to link these advantages that they may appear equally balanced to both parties. For this purpose when negotiations are on foot between two sovereigns, one the greater and the other the less, the more powerful of those two should make the first advance, and even undertake a large outlay of money to bring about

the union of interests with his lesser neighbor. . . . The secret of negotiation is to harmonize the interests of the parties concerned.  

These several views confirm that issue linkage is a prominent and venerable practice. They differ on its rationale and usefulness. They certainly do not suggest the existence of a unified theory. Analogous observations apply to the inclusion and exclusion of parties to negotiations.

In this article I attempt to incorporate certain occasionally contradictory insights from qualitative studies of negotiation into a more systematic framework. My success depends on two contentions: first, that issue and party manipulation can usefully be conceived of as common classes of negotiation moves; and second, that these moves can be related one to another by straightforward analytic devices.

Most of the propositions developed here are known in at least some version from other, scattered contexts. Several are implicit in writings on negotiation. Many are second nature to bargainers. But the applicability of these ideas may be enhanced by isolating them, making them explicit, and showing their connections under a set of broader principles. At a minimum, the analysis can be regarded as an extended checklist of considerations relevant to structural aspects of negotiation that analysis often assumes as a point of departure. Section 1 treats the issues of negotiation as variable. Section 2 considers the parties in a similar way. Section 3 summarizes the main conclusions.

1. Adding and subtracting issues

De Callières’ analogy suggests a useful orientation. Think of issues as different types of commodities and of negotiators as traders in a market. Depending on preferences, endowments, and institutional and legal arrangements, as well as on relative market power, certain items will enter the market and possibly be traded while others will be kept out. A suitably modified economic theory of exchange could be useful to describe the interactions and results.

For the exposition, assume that the negotiator-traders have preference functions defined over the attributes of the possible issues. Think of the tradeoffs among several issues that these functions capture as being implied by a set of negotiating instructions. Analysts often represent this framework as in Figure 1. The parties’ value functions, \( V_1 \) and \( V_2 \), have the attributes of the issues under consideration as arguments and are measured along the different axes. The curve in the northeast quadrant represents the evaluations of the set of those possible agreements on the issues that could not be improved upon from the standpoint of either party without harming the other. The

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FIGURE 1. Common representation of the bargaining problem
Notes. 1. The origin represents the value of no agreement (status quo).
2. All points in the northeast quadrant are mutually preferable to the status quo.
3. The curve in the northeast quadrant is the locus of possible agreements that cannot be improved upon without reducing the value to at least one party (the Pareto frontier).

origin (point O) represents the values of failing to reach agreement on the set of issues that are actively being negotiated.

The evaluations of possible resolutions of single issues can be displayed as in Figure 2. Say that issue A is a discrete or discontinuous issue with only two possible resolutions, A' and A'', and that each such resolution greatly favors one side at the other's expense. As shown, A' is worse for Party 1 than no agreement and A'' is similarly undesirable for Party 2. The outcome would be no resolution. (Notice that no interpersonal value comparison is required, only each side's ranking of the issue relative to its own no-agreement level.) A second issue, B, is continuous and can be settled at any value between two extremes (represented by the origin and point B). Say that B is the level of military aid that Party 1 gives Party 2. The joint preference levels of B's various outcomes are represented by the line in the northwest quadrant of Figure 2. But settlement is preferable to no agreement only for points in the northeast quadrant; thus, issue B would remain unresolved. Issue C has a discrete outcome (point C') in the southwest quadrant (say a decision against undertaking a proposed program) and a continuous series of outcomes (line segment C) that both parties prefer to the status quo (say an affirmative program decision with the chosen level of expenditure ranging
FIGURE 2. Basic graphical apparatus for considering value of individual issues

Notes. 1. Only points on the northeast frontier are preferable to no agreement (O).
2. Issue A has two discrete outcomes (A* and A*). Each favors one side at the expense of the other. No resolution is possible.
3. Issue B involves aid given by party 1 to party 2. Party 1 derives negative benefit from every proposed level, from nothing at (O) to the full amount at (B). No agreement is possible.
4. Issue C has a discrete outcome not to undertake jointly a program (shown at C) or to undertake it at different levels (from $10 to $20 million). The program will likely be undertaken at some bargained level.

from $10 to $20 million). The parties could profitably settle this issue at any bargained point on the segment in the northeast quadrant.

This representation of the values of single issues assumes that the other arguments of the preference functions are held at status quo levels. Such arguments include both the attributes of the other issues specifically involved in the negotiation (such as issues A, B, and C in Figure 2) and those of the rest of the potential issues between the two parties. These latter issues, which are explicitly or tacitly held constant in many negotiation analyses, constitute the elements of a larger interaction or of a “supergame” among the parties.

6. Notice that this graphical analysis can readily handle both continuous and discrete issues. Tollison and Willett, “Economic Theory,” pp. 441–43, suggest “discontinuous” policy options as “possible extensions” of their analysis. Arthur Stein in a recent article, “The Politics of Linkage,” World Politics 32 (1980): 62–81, limits his analysis to discrete issues by the exclusive use of 2 x 2 game matrices, which he says are “widely considered to be the most appropriate” models for such analysis. This choice restricts consideration to two parties each with two discrete choices.
The analysis of issue addition centers around the attempt by one or another negotiator to vary the values of these other issues. There are, however, several caveats for the use of this kind of graphical analysis and its underlying "value functions." Some care should be exercised in the analysis when defining the appropriate attributes of the issues. Two examples make the point. Roger Fisher and William Ury discuss the possible resolution of the Egyptian-Israeli Sinai dispute, which could be viewed as a classic zero-sum case of bitter haggling over the location of a frontier. One might consider the amount of land assigned to each side as the relevant attribute. If Egypt were primarily interested in sovereignty and Israel were concerned with security, however, these differentially valued attributes could be unbundled by creating a demilitarized zone under the Egyptian flag. More prosaic is the case of two people arguing over the division of one orange, each feeling an absolute need for three-fourths of it. If, however, their discussion reveals that one is hungry and the other wants the peel for a recipe, the negotiation could shift from where to cut the fruit, to how to separate its different relevant "attributes." For analytic purposes, the more fundamental attributes are the appropriate arguments of negotiators' value functions.

It is also practically important that the chosen value functions not be defined too narrowly. Analysis may go awry if consideration is limited to the immediate, substantive issue at hand when, for example, precedent is a key question. Certain tactics, as well, may effectively expand the relevant set of attributes. "Take-it-or-leave-it" offers, forced linkages, commitment moves, threats, and preemptive actions contain the potential for eliciting strong negative reactions, which may overwhelm the original issues at stake. A trade union's motivation for strikes, for instance, may shift over time from the strictly economic to a desire for revenge. Likewise, wars can escalate out of all proportion to the possible substantive gains for either side. The sudden Argentinian occupation of the Falkland Islands in 1982 and the British response quickly came to involve weighty, irreconcilable attributes such as national "honor" and the "right" response to aggression. In many circumstances, threats, commitments, and deterrent moves are effective and can be analyzed in terms of values for the immediate issues involved. In other cases such tactics can induce anger, loss of "face," and aggression. Thus, analysts must recognize, in the use of value functions, the possibility

that certain bargaining tactics can cause the addition of other attributes and issues beyond the more utilitarian concerns ostensibly involved.\textsuperscript{11}

Reliance on the use of value functions merits a few further comments. Ideally, one might think of such functions as true "welfare" functions; in practice, one must take them to be a negotiator's idea of the relationship of the various issues to his or her own, the client's, the group's, or the "national" interest. It is frequently useful to consider the negotiator's personal "payoffs" from particular results. Of course, the different parts of a compartmentalized bureaucracy will try to weight heavily the issues in their respective purviews. Domestic pressure groups and others will act in ways that tend to frustrate tradeoffs.\textsuperscript{12}

Yet multi-issue negotiation depends on formal and informal judgments: in real negotiations some person or group does decide whether a proposed trade is worth taking, whether a contemplated concession should be made, and, ultimately, whether a final package is better than no agreement (in terms of Figure 2, whether it falls in the northeast quadrant). For present purposes, consider such decisions as being made from the point of view of the negotiator or of those to whom he or she may be accountable. (A separable problem, of course, may be inducing the negotiator to use a different set of values in making decisions.)

A negotiator's ultimate judgment may well be subject to explicit external validation: the U.S. Senate either ratifies a signed treaty or does not, a union rank and file votes up or down a contract its leadership has negotiated. During the bargaining prior to such validation, the negotiator must constantly assess the probability that the deal brought back will be formally affirmed. It is subject to this series of understandings about the negotiation context that value functions as an analytic means for representing tradeoffs from the negotiator's point of view can be used—even given compartmentalized bureaucracies, pressure groups, internal divisions, and external contraints.

\begin{quote}
a. Definitions of issue addition and subtraction
\end{quote}

With the basic analytic machinery in place for the subsequent discussion, I can now render more precise the meaning of issue addition and subtraction. Issues are said to be "added," combined, or linked when they are simultaneously discussed for joint settlement. One example is the consideration of deep seabed mining together with traditional maritime issues in the Law of the Sea conference. When issues are explicitly brought together for bargaining purposes, devices such as the "package deal" or the "single negotiating


\textsuperscript{12} The usual caveats about unitary, rational actor models in bargaining analyses apply. They are intelligently considered in Tollison and Willett, "Economic Theory," pp. 441–42, and Stein, "Politics of Linkage," pp. 79–81.
"text" procedure (used at Camp David as well as in the Law of the Sea) may be used. When issues are joined at "summit" conferences, rather than being treated and evaluated separately at lower bureaucratic echelons, I can say that issue addition occurs.

Issue subtraction or separation takes place when issues are each considered in an effectively independent forum. The acceptability of possible settlements on each issue may be evaluated "on the merits," without respect to the outcomes of other issues. This may occur if "acceptable" solutions for each issue are determined independently, perhaps by different people or organizational entities. Tacit or overt agreement not to take up a question or to drop another question entirely are examples. To illustrate the point, marine negotiations are actually separated among the International Marine Consultative Organization, the International Whaling Commission, and the Law of the Sea conference. At one time NATO and the OECD effectively separated most issues that the industrialized countries faced. Furthermore, within a particular negotiation issues may be decoupled by considering them at different times, by distinct subgroups of negotiators, or one at a time without the possibility of logrolling.

One or more parties to a negotiation may seek to add or subtract an issue. The process may be formal or informal, express or implied. In some cases, when participants enter or leave a negotiation, the issues may change correspondingly. In the following sections I develop several propositions that involve issue addition and subtraction. First, I suggest analytic distinctions for issue linkage in its most familiar form, the traditional "leverage" noted earlier by Wallace. Then, in sharp contrast to this use of leverage for achieving one-sided gains, I investigate the ways that issue addition can create a zone of possible agreement in the northeast quadrant. (Tollison and Willett's work represents a special case of such agreement.) The next set of propositions provides a counterweight to this optimistic analysis, delineating circumstances in which issue addition can destroy zones of possible agreement. A variety of miscellaneous purposes are then discussed.

I state the propositions descriptively and, as such, imply common knowledge of parties' interests. Nations' interests in a set of negotiations are often fairly obvious to all, as a number of the following illustrations indicate. Nevertheless, if bargaining team A consulted any of the following propositions for advice, its subjective evaluation of team B's values would be required.14


14. Of course, a key aspect of negotiating judgment lies in subjective decisions (by, say, a delegation head) that package 1 is preferable to proposed package 2, that giving on this issue in return for movement on that one is worthwhile, or that the other side will value one set of concessions more than another. Trying to make these decisions over several issues is an implicit application of the ideas of multi-attribute value theory. It is perhaps worth noting that "value" need not be denominated in monetary terms. The technology for handling multiple-objective problems has been extensively developed in recent years. For example, see Ralph Keeney and
FIGURE 3. Unlinked negotiations between issues A and B

Notes. 1. Issue A is over two mutually beneficial technology transfer proposals and
is the subject of negotiation between developed and less developed countries.
2. Issue B is over fixed price levels for agricultural commodities. It is not under
negotiation and the developed countries, who would derive disutility from any settle-
ment, do not want to talk about it.

Predictive application of the propositions, in principle at least, is similarly
straightforward.

b. Proposition: adding issues can yield one-sided gains to the exercise of
power

Analysts frequently discuss the linkage of issues through the use of leverage. 
One side may force a new issue onto the negotiating agenda by the exercise
of otherwise unexploited power. (Of course, rather than being used to force
linkage, the same power might compel a particular settlement of an existing
issue.) I find it useful to distinguish between linkage induced by the threatened
exercise of power in an area unrelated to the existing negotiations and linkage
by the use of power intrinsic to a given negotiation.

Case 1. Unrelated, unexploited power. Suppose that there is an ongoing
negotiation between developed and developing countries over two potentially
acceptable proposals for the transfer of technology (points A' and A in
Figure 3). Suppose that the developing countries also want to discuss fixing

Howard Raiffa, Decisions with Multiple Objectives: Preferences and Value Tradeoffs (New York:
John Wiley, 1976), or Scott Barclay and Cameron Peterson, Multi-Attribute Models for Ne-
applications have included the Panama Canal negotiations and negotiations over Philippine
base rights; see Raiffa, The Art and Science, pp. 166–86. Tanker safety standard negotiations
are discussed in Jacob W. Ulvila and Warren G. Snider, "Negotiation of Oil Tanker Standards:
An Application of Multi-Attribute Value Theory," Operations Research 28 (January–February
1980): 81–96. Middle Eastern oil negotiations are the subject of Rex Brown and Cameron
Peterson, An Analysis of Alternative Middle Eastern Oil Agreements, Technical Report (McLean,
FIGURE 4. Use of unexploited power in issue C to force linkage in issues A and B

Notes. 1. Issue C is an oil price rise from the status quo, O(C), to new levels, O(C'). It was implicit in the negotiations in Figure 3.
2. Less developed countries want to force the linkage of issues A and B (not linked in Figure 3).
3. Evaluations of possible settlements of linked issues A and B with no oil price rise are along segments A'(C)B(C) and A''(C)B(C).
4. If the linkage is refused, the developed countries will be much worse off than the status quo with no oil price rise, O(C). The unlinked situation with issue A and a price rise is represented by O(C)A'(C'), and A''(C').
5. The developed countries will accept the linkage to stay out of the northwest quadrant.

a set of agricultural commodity prices at various levels, evaluated in value terms along segment OB in the northwest quadrant; developed countries find the terms progressively more objectionable as they move toward point B. The developed countries refuse the linkage. But suppose further that another common argument in the representatives' value functions is the price of oil. In the negotiations so far, it has been implicitly held constant. The developed countries are threatened with a rise in the price of oil unless negotiations over agricultural prices are added to the original discussion.

Figure 4 displays the new situation. The letter C represents the situation under current oil prices and C' represents the case with an oil price rise. Linkage of agricultural prices is graphically accomplished by attaching segment O(C)B(C) to points A'(C) and A''(C). Now the developed countries face the choice of unlinked negotiations with an oil price rise (points O[C'], A'[C'], and A''[C'] in the northwest quadrant) or linked negotiations over segments A'(C)B(C) or A''(C)B(C) without a price hike. The linkage is forced by the threat of unilateral manipulation of an unrelated argument of the value functions. 13 This is an example of what I mean by the use of unrelated,

FIGURE 5. Linkage of issue B forced by intrinsic power of commitment
Notes. 1. Negotiations on issue A alone have narrowed to point A.
2. Party 2 does not want to discuss issue B. The evaluations of issue B alone are along segment OB.
3. Party 1 makes a commitment to no agreement, the origin (O), if party 2 will not discuss issue B.
4. The evaluations of the linked issues are along the dashed segment A(B).
5. Party 2, preferring any point on A(B) to no agreement (O), is forced to accept the linkage.

unexploited power. (Beyond forcing the link, of course, the same power might influence the outcome of the linked negotiation.)

One could argue that coastal states' threats of accelerated territorial claims and restrictions on navigation and scientific research helped enforce the continued linkage of a new regime for deep seabed nodule mining in the Law of the Sea conference even though many industrialized countries desired a seabed "mini-treaty." The same mechanism, unrelated issue leverage to force linkage, would be present if a transnational mining company felt compelled to enter negotiations on building hospitals and schools in a host country lest the financial terms of its contract be unfavorably revised. In all such cases, the threat of unilateral manipulation of a different issue in the "super-game" among the parties could be used as the lever to force the linkage.

Case 2. Intrinsic power from commitments. The power to force a linkage need not come from a threat whose source is outside the negotiating issues at hand. It can come from within a pure bargaining situation in which a commitment can be successfully made. Imagine (as in Figure 5) that the bargaining range has narrowed to a single point, A, which both parties prefer to the status quo. Party 1 would now like to discuss the issue whose outcomes are evaluated along OB, but Party 2 will not hear of it. Suppose that Party 1 is able to make a binding, visible, and irreversible commitment to no
agreement (the origin) unless Party 2 agrees to the linkage (graphically made by attaching segment OB to point A to get the dashed segment A[B]). If Party 2 has not committed itself similarly (in which case both sides would lose, ending up at the origin unless one commitment can be undone), its choice is to bargain over segment A(B) or to get nothing. Party 1 will have forced the addition of another issue.\(^6\)

If a traveler has carefully planned a tight itinerary and is confronted at the airport with an unexpected ticket surcharge (even without which the airline may be able to make a profit), there is a good chance that the fee will be paid. In the European negotiations to move to the mutually beneficial Second Stage of the Common Market, the French were able to force the linkage of an agricultural policy that the Germans, in particular, did not want but preferred to no agreement. Further examples of linkage forced by commitments to no agreement fall in the categories of "tie-ins" and "last-minute" demands as discussed by Fred Iklé.\(^7\) One can easily extend the analysis to the creation of troublesome issues for bargaining purposes.

In each of these familiar cases of forced linkage—by unexploited, unrelated, or intrinsic power—it is worth noting that the party desiring the linkage need not actually be able to carry out the threat or abide by the commitment. The effectiveness of such an action is a function of the threatened party’s evaluation of the magnitude of the consequences, its assessment of the probability that the threat will be carried out, and its attitude toward taking risks.

A very risk-averse party might respond to a large threat that has only a small chance of actual occurrence.\(^8\)

This simple graphical apparatus for adding issues in a negotiation can, of course, be used to show the working of mechanisms to keep items off the negotiating agenda. This negative "second face of power" is often important.\(^9\) I use these same tools in the following analysis to demonstrate other propositions concerning issue choice.

c. Proposition: adding issues can yield joint gains that create or enhance a zone of possible agreement

In the analysis of this section I demonstrate that separating some issues may preclude any chance of agreement while adding them together would create the possibility of a beneficial bargain for each side. I distinguish among three such cases: adding apparently unrelated issues together, overcoming


\(^8\) Once into the world of decisions under uncertainty, more analytic machinery is required than was needed for the "value" theory–based analysis. "Utility" theory is an appropriate approach and is admirably treated in Keeney and Raiffa, Decisions with Multiple Objectives.

distributional impediments to efficient agreements by adding issues, and exploiting actual dependencies among separate issues.

Case 1. Creating or enhancing a zone of agreement by adding differentially valued, unrelated issues. A particular subnegotiation within the seabeds portion of the Law of the Sea conference illustrates the proposition. By 1978, approximately 90 percent of the issues in the conference were settled. There were seven remaining “hard-core” sets of articles upon whose resolution the treaty’s fate was expected to turn. One of these—the so-called “financial arrangements”—essentially involved two issues.

The first of these issues concerned the system of financial payments (fees, royalties, profit-shares) that future seabed miners would pay to the international community in respect of the agreed principle that manganese nodules are the “common heritage of mankind.” For the most part, the prospective mining countries—acutely aware of the uncertainties and risk of seabed mining—were amenable to paying low levels of profit based on “flexible” charges. Representatives of developing countries by and large felt that there should be high, fixed, or “rigid” payments. An agreement on this issue by itself appeared to be impossible.

The second issue was concerned with the funding for the initial mining operation of a new International Seabed Authority, which, it was estimated, would cost on the order of one billion dollars. In question were the level of funds to be contributed and whether these would be in the form of grants, loans, or guarantees by states ratifying the ultimate convention. The developing countries, many of whom regarded the successful launching of this project as crucial, wanted a high proportion of long-term, interest-free loans (for brevity, I refer to such loans subsequently as cash grants) while the developed countries greatly preferred loans to supplement whatever funds the new entity could raise commercially. The financial negotiators felt that they were at a complete impasse on this issue.

A stylized version of this situation is displayed in Figure 6. Possible outcomes of the negotiations on financial terms of contracts correspond to points on segment OA. Notice that the developed countries find higher, more rigid schemes increasingly objectionable. The developing countries, however, would not agree to any of the settlement points for financial terms displayed on OA. The reverse is true for various mixtures of funding for the first international mining operation. The developing countries prefer more direct cash grants but any proposed settlement of this issue would be blocked by the developed countries. No settlement points of either question appear in the feasible (northeast) quadrant.

Negotiators generally treated the two issues separately until 1979, when

FIGURE 6. Combining individually unresolved issues to create a zone of agreement

Notes 1. Developed countries prefer low level of flexible payment terms, A. Developing countries will block any settlement on OA. Developing countries prefer cash grants for financing initial operation of international mining venture.
2. No agreement is possible for individual issues considered separately: financial terms of contracts, OA; financing initial mining operation, OB.
3. Evaluation of their combination is bordered by points A, B, and C.
4. Hatched segments are Pareto-optimal combined points in zone of agreement generated by adding the issues.

A bargaining linkage was forged between them. Adding them together is analytically equivalent to taking their vector sum. Segment ACB represents the evaluation of the combined issues—a zone of possible agreement (in the northeast quadrant) is created along the hatched segment. (Point C, for example, is a flexible system with full cash grants.) Separately considered, however, there was no possible agreement on the issues.

The analytic point is easily stated: adding differentially-valued issues together can create or enhance zones of agreement where none would be possible if separate negotiations took place and the outcome of each such negotiation were separately evaluated for acceptability.

Case 2. Overcoming distributional impediments to jointly beneficial agreements by adding issues as side payments. Economists often concern themselves with “efficient” policies, those that, for example, maximize aggregate production, while giving short shrift to distributional aspects. The usual rationale is that the distributional “winners” from a truly efficient policy could more than amply compensate the “losers” by side payments. The winners would be better off than under the status quo ante even after paying the losers. Observing that direct side payments are often institutionally implausible in international negotiations, Tollison and Willett suggest that issues functioning
as side payments may effectively be added to negotiations. They present an involved example of negotiations to form an alliance that would yield some general benefits. There are also specific benefits to the parties that depend upon where alliance production is located. Scale returns are involved in the production. Skewed benefits and costs interact in such a way that no proposed division of production leaves both parties better off than under the status quo; considerable total benefits thus stand to be lost for distributional reasons.

Figure 7 displays a version of this situation. At point A, Country 2 produces the whole alliance output and enjoys great benefit while Country 1, after paying the costs and getting no domestic production, is worse off than under the status quo. Point C reverses the situation, with Country 1 producing all the alliance output. Point B represents a split in production but a loss in scale economies makes the alliance too costly for either party. Suppose, however, that the parties find another issue (represented by segment OD) that has the character of a side payment from, say, Country 1 to Country 2. Adding this issue to the previously inconclusive negotiation affords numerous possible points (along curve BCDC) that dominate the status quo. For example, point CD results from attaching segment OD to point C and

corresponds to a settlement in which Country 1 produces all the alliance output but the new issue is added and settled at point D.

The general principle is again easy to state: adding issues as side payments may allow the realization of overall efficient agreements that might otherwise be blocked for distributional reasons.

Case 3. Adding issues to exploit their dependencies. The analysis so far has proceeded under the implicit assumption that each party evaluated each issue in question the same whether the issue was taken by itself or combined with another. This has facilitated the graphical analysis, which has shown the potential for reaching the northeast quadrant—possible, mutually beneficial agreement—by the combination of issues. Yet sometimes there are positive dependencies among the evaluations of issues when the issues are taken up together. The effect may be described as synergy. It shows up simply in the case of economic complements: pencils and papers are worth more in combination than singly, and the same may be true of coffee and sugar. If such positive interactions exist among negotiating issues, they may be exploited to the advantage of all the parties.

Imagine a very difficult political-military negotiation within a strained NATO, one that appears to have at best a grudgingly possible zone of agreement. Simultaneously, divided OECD members are seeking an economic agreement with the same painful prognosis. Adding the issues to each other may make resolution more valuable. The perceived value of the alliance members’ hammering out successful agreement on both issues may make the whole greater than the sum of the parts and may thereby make joint resolution easier. Simultaneous resolution contributes to the additional attribute of alliance unity.

Two potential adversaries may be engaged in separate talks over reductions in conventional and nuclear arms. Each party holds a position of great relative strength in one of the two areas. In each separate area, equal force reductions are contemplated. There is no possible agreement in either forum—since equal cuts in, say, nuclear weapons would be only slightly harmful for the side with an initial nuclear edge while much more significantly detrimental to the power of the country relatively weaker in nuclear strength. The case with conventional arms could be similar. Figure 8 displays this situation. Notice that the combination (by simple vector addition) of these two issues would fall in the southwest quadrant, which is worse for each side than no agreement. Yet evaluation of the joint effect of mutual reductions in both military categories may well be in the northeast quadrant. Each country would be reducing both its stronger and its weaker types of forces, each country would be spending less on arms, and the relative security levels need not change. The interaction between the issues lies in their effects on security and budget.

Another kind of dependency can be exploited by adding issues, in the
same way that portfolio diversification can reduce investment risk. A standard economic example makes this point. Suppose that an entrepreneur owns two businesses on a tourist island, one with the concession for rain umbrellas, the other with the rights to sell suntan oil. He is negotiating the sale of each business to a different party. Neither is willing to pay the entrepreneur’s price, partially because each business by itself is quite risky. When the sun shines, the suntan oil concession flourishes while the umbrella business languishes. When it rains, the reverse happens. A potential buyer in each negotiation has lowered her offer to compensate for this specific risk. Yet, if the negotiations could be combined, the two potential buyers could form a partnership to buy both concessions, which together would have a much less variable cash flow than either single business. The price offered for both together may well exceed the sum of the offers for the separate components. Combining the issues enhances the possibilities of agreement.

The second overall proposition—that adding issues can yield joint gains that create or enhance a zone of possible agreement—is thus true for at least
three types of situations: first, where unrelated but differentially valued issues can be combined; second, where distributional impediments to otherwise efficient agreements can be overcome by adding issues as side payments; and third, where actual dependencies (complementarities or synergies) among issues can be exploited by their combination.

One can take the analysis of this section as an argument for simultaneous rather than separate or sequential consideration of negotiating issues. If, for example, formulating a government’s “bottom line” in negotiating instructions is done on an issue-by-issue basis, with only the contested items referred to a higher bureaucratic level, certain beneficial agreements may be ruled out of consideration. What appears incontestably a bare minimum on one particular issue by itself may in fact be flexible when this issue is considered together with favorable settlements on other questions.

The use of a “single negotiating text” can facilitate the simultaneous consideration of several issues. “Package deals” can result in similar advantages. The social-psychological literature lends some experimental support to the proposition that juggling multiple issues together can lead to settlements that are Pareto-superior to those obtained by bargaining on an issue-by-issue basis.22

Issue-by-issue consideration may, of course, be necessary to avoid the sheer complexity of combination and partial agreements may provide impetus to overall ones. In fact, Iké considers the policy of “honoring partial agreements” as a virtual “rule of accommodation” that is followed by most international negotiators.23 Such a practice, however, may lead to settlements that could easily be improved upon from the standpoints of all parties. Consider a related implication of the order of settling issues. Figure 9 displays a situation that is similar in structure to Figure 6. No agreement appears possible on the issues if they are considered separately but their combination affords the possibility of settlement along the hatched segments in the northeast quadrant. Suppose, however, that agreement on the issue represented by segment OA is reached first, at point D. Combining this settlement with issue OB, however, only allows points along segment DE to be reached. Many of these points are dominated by (that is, less desirable than) the hatched segment FGE that could result from simultaneous consideration. (Of course, for tactical reasons one side may well wish to settle one issue at a particular point to limit the effects of settlements on other questions.)

It is but a short step from stressing the value of simultaneous consideration of issues to the argument that as many issues as possible should be added together so that the best possible settlement may occur after “trading.” In the case of the Law of the Sea conference, Evan Luard argued that

Every country, and every group of countries, had a different and some-

times conflicting range of interest within ocean space: either on the surface of the sea, on the bottom, or both. Agreement was likely to be reached only if all these varying interests could be accommodated through a vast, comprehensive package. The outcome was thus bound to be a compromise; in which something was given, say in preferential fishing rights, to those countries which were mainly interested in fishing; something to the landlocked and shelf-locked countries without any waters or shelf of their own; something to the archipelago countries with special economic and security problems to protect; something to the highly developed which already had the capacity to exploit; and something for the developing as a whole, which reasonably felt that, if the resources at hand belonged to the whole world equally, the essential point was to assume that all obtained a return from them. Only if these varying interests were balanced would a solution be possible. And only if the manifold issues were considered together in a single, mammoth negotiation, so that a concession on one point could be balanced by a concession on another, were the conflicting interests likely to be reconciled.24

Using the term "contract curve" for the Pareto frontier or the boundary of the zone of possible agreement, Tollison and Willett make the same point in general terms. "When the contract curve is clear and well understood by all parties, the aggregation of issues is quite helpful to the process of reaching international agreement. A multiplicity of issues creates more possibilities for indirect trades leading to productive agreements." 25

The foregoing analysis supports these points by laying out cases in which adding issues may be mutually beneficial. But I cannot generalize the advice implicit in the last two quotations to all situations. Adding issues together is not always desirable, even when they are well-understood, as the next set of propositions seeks to demonstrate.

*d. Proposition: adding issues can reduce or destroy a possible zone of agreement*

Adding issues together, with the requirement of simultaneous explicit agreement on all of them, may reduce the chances for a successfully negotiated outcome. It is useful to distinguish between cases in which some of the included issues may have no separate solutions and those in which all the issues are resolvable individually until combined. There are several additional, miscellaneous reasons that may militate against issue addition.

*Case 1. Adding issues that have no zone of agreement by themselves may destroy overall chances of a settlement on other issues.* I have shown that, in some cases, the combination of issues that are individually impossible to resolve may facilitate agreement. But it is possible to go too far. If one adds a sufficiently divisive issue to other, less contentious questions and one requires joint resolution of them all, then agreement may be rendered impossible. Figure 10 displays two discontinuous issues. Issue A has two possible resolutions (A' and A") in the northeast quadrant. The parties would prefer either bargained outcome to no agreement. Issue B also has two possible settlements (B' and B"'). Each outcome of Issue B is mildly desired by one party and detested by the other. Adding the issues together (so that the parties must agree on A'B', A'B"', A"B', or A"B"; see Figure 11) takes all possible settlements out of the northeast quadrant. Requiring that the status of Jerusalem be resolved at the first stage of a possible Mideast accord might overburden a set of other issues that potentially could be settled. If the negotiation agenda included Jerusalem, the parties might profitably agree to "subtract" it and perhaps to take it up later if benefits from agreement on the other issues have sufficiently strengthened the parties' relationship.

FIGURE 10. Separate discontinuous issues
Notes. 1. Issue A can be settled at A' or A". Either outcome is preferable to point O.
2. Issue B can be settled at B' or B". Party 1 will not agree to B' and party 2 will not agree to B".
3. If the issues are considered separately, there would be no agreement on issue B and possible agreement on issue A.

An instinctive response to a situation like this is to drop the requirement of simultaneous settlement, especially if both sides prefer a resolution of the remaining topics to no agreement. Of course, agreement to drop or postpone the settlement of a particular issue may not be neutral to the outcome on the other questions in the negotiation. Iklé cites an arms control example:

Excluding underground tests from the nuclear test ban treaty surely facilitated agreement. But until the summer of 1963, Khruschev vigorously opposed this separation of issues. He must have realized that once a partial treaty had been signed, the western powers would feel under much less pressure to accept his minimal detection arrangements for banning underground tests.26

Despite its obvious appeal, the separation of extremely divisive issues from other questions that do have mutually beneficial settlements by themselves is sometimes difficult or impossible. Appropriations bills in the U.S. Congress must sometimes be signed or vetoed in their entirety. Executive-legislative budget negotiations may produce bills that result in impasse because of a

FIGURE 11. Adding issues to destroy possible zones of agreement
Notes. 1. Issue A could be mutually and beneficially solved at A' or A".
2. Issue B has no zone of agreement.
3. Adding issues A and B and requiring their simultaneous resolution destroys possible zone of agreement of issue A.
4. All possible combined packages (A'B', A'B", A"B', A"B") are outside northeast quadrant.

single, divisive item. An entire, otherwise mutually acceptable, set of compromises thereby may be lost.

Case 2. Adding issues with individual zones of possible agreement may destroy or reduce a combined zone of agreement. A somewhat more interesting case involves issues that may be resolved individually to the benefit of all parties but cannot be settled when considered together. Usually this happens when a “smaller” issue takes on some of the attributes of a “larger,” difficult, but potentially solvable question. Consider a proposed trade deal between two countries who are engaged in drawn-out, inconclusive, expensive hostilities that may be considered the status quo. Both the hostilities and the economic action may have outcomes preferable to the current situation. But it may be impossible to consummate the trade deal unless the hostilities are settled. Even a jointly desired agreement not to mistreat the other’s prisoners or not to use particular tactics or weapons may be impossible to reach because of its symbolic overtones. Fisher offers an example: “In August, 1961, a civil aviation agreement between the United States and the Soviet Union was negotiated. The United States might have signed the agreement, treating it as a separate matter. We chose, however, to decline to sign it, and considered the matter related to Berlin.”

To avoid adding such issues together, they may be considered at a lower bureaucratic level. Sharing of the fur seals on the Alaska-Siberia border in the 1950s, at the heights of the Cold War, was easily handled by delegating the question to low-level officials. In another case, meteorologists in the Weather Bureau were able to maintain the common interest in exchanging weather data with Cuban stations even during the Cuban missile crisis.

Several other reasons for not adding issues together merit brief consideration. First, instead of positive dependence (synergy or complementarity) negative dependence may result from combination. Two issues may be worth less together than apart (substitutes) or may be riskier when joined (if the concessions in a previous example were, say, suntan oil and sun rather than rain umbrellas). Part of a negotiation may involve such extreme uncertainty as to its effect (say, flexible versus fixed exchange rates) that when added to other, more certain issues (say, particular tariff levels) it may interact with them to make the whole package too uncertain.

It is possible to imagine adding some issues that are of interest only to a subset of the negotiators in a multilateral conference. The possible settlements on these issues could be quite contentious but necessary for an overall bargain. Other negotiators may have to make so many concessions to induce the smaller group to settle its dispute as to render overall resolution impossible.

Finally, negotiations may reach some critical mass that stimulates third-party opposition. Mandatory transfer of seabed technology might have been possible as a part of a Law of the Sea package; but if it were combined with other technology transfer issues as a separate negotiation, even unrelated national industrial organizations might have mobilized against the more visible policy.

In this discussion I have considered numerous ways, quite apart from the traditional conception of linkage forced by leverage, in which adding or subtracting issues at various stages of a negotiation can create, enhance, reduce, or destroy a zone of possible agreement in negotiations. These can be related by a common analytic device that allows graphical combination or separation of issues. But there are other reasons to add and subtract issues.

e. Further reasons for adding or subtracting issues

Reason 1. Adding issues can solidify coalitions. Adding issues to a negotiation may be a way to strengthen a coalition by offering in effect an inducement for preserving solidarity. A national labor union may bargain primarily over such issues as wages that concern all its members. Adding several issues that particularly concern different local unions, however, may earn their more enthusiastic support in a contest with management. There may be considerable uncertainty as to the resolution of these issues, the actual effects of a settlement, and the ultimate distribution of any benefits
generated. Including a number of such issues may be a way to hold coalition members together.

The developing countries' organization across many international conferences—the Group of 77—has displayed a remarkable solidarity even when internal divisions of interest were present. Part of the reason for this solidarity may consist of the large number of issues—terms of trade, technology transfer, debt relief, sovereignty over natural resources, and the like—that promise widely distributed but uncertain benefits if the group succeeds. The issues may have very poorly understood cause-and-effect connections. The likelihood of achieving success on any of these items, however, appears lower if overall solidarity is not maintained. Ernst Haas calls this phenomenon "fragmented linkage," in which "uncertainty about outcomes is part of the glue that holds the coalition together."28

Reason 2. Issues may be added to strengthen bargaining commitments. Issues may be "added" to a negotiation in a slightly different sense without being subject to settlement one way or the other. Commitment tactics commonly aim to link the resolution of one issue to another, or to parallel issues in a future set of negotiations. Suppose that a negotiator persuades others that he will incur real costs elsewhere if they reach certain settlements on the current negotiating question. By this means he may be able to narrow the zone of possible agreement in his favor. If wage levels settled upon in one negotiation will be the focal point for other and parallel negotiations; if the terms of the latest Third World mineral contract with a mining company will be applied to its other operations; or if these consequences can be presented as likely enough (whether in fact they are or not)—then negotiators may credibly make a commitment not to accept terms less favorable than some specific amount. Seabed mineral production controls, mining technology transfer, or the governing structure of a new International Seabed Authority may have a small initial effect on a tiny new industry. Their value as precedents for the moon, outer space, the airwaves, or the Antarctic may be invoked, however, to argue against the proposals of the developing countries. These proposals, in turn, may be made not with seabed benefits primarily in mind but with a vision of an overall New International Economic Order (perhaps embracing the other named resources).

If one links attributes of the issues in one negotiation to those of another one may, in effect, squeeze the zone of agreement in one's favor. Procedural precedents may be such an issue. A negotiator may link her conduct or concession-making behavior to her "bargaining reputation" and claim grave future harm for taking an action now that appears in substance quite acceptable.

Reason 3. Adding issues may alter the parties to a negotiation. The addition of issues may, along with changing the substantive focus of a negotiation, have the effect of adding new parties whose primary concern is with the new issue. Indeed, changing the parties may be part of the reason for adding the issue. For example, the entry of a different, supposedly more reasonable group of bureaucrats may be triggered. (This “new party effect” could have accompanied many of the instances of issue addition discussed earlier.) Of course, a particularly obnoxious set of negotiators may leave the bargaining if “their” issue is subtracted (dropped or postponed).

Legal officers of two corporations, working out a primarily legal agreement, may add the financial staffs to the negotiations by adding financial aspects to the original bargain. One way the Merchant Marine Committee could ensure that the House Ways and Means Committee members leave their specific imprint on a bill to authorize U.S. companies to mine the seabed would be to add a minor tax provision to the bill. It is easy to imagine cases in which a party brought in with an issue might have still another useful relationship or connection with one of the original negotiators. (Section 2 deals with this question in more detail.)

f. Complicating considerations in the addition and subtraction of issues

There are several qualifications to this discussion of adding and subtracting issues. First, there is the question of complexity. As issues are aggregated, the amount of information a negotiator requires increases and the negotiation itself becomes more cumbersome. Tradeoffs among more diverse areas may need to be made at ever higher levels of the organizational structure. The issues themselves may be technically complex, while rationality and attention spans are severely bounded.

Relationships among diverse issues may be complicated and putting questions together in order to make bargaining tradeoffs may be unintentionally harmful. Fisher and Ury argue for the separation of issues and individual settlement “on the merits.” They use an example in which

a contractor in a negotiation with the owner of a building in the works said “Go along with me on putting less cement in the foundations because I went along with you on stronger girders in the roof.” No owner in his right mind would yield. Nor would he yield if the contractor threatened to make the owner’s brother-in-law lose his job or offered the owner a special favor.29

Adding issues together in a bargaining sense while ignoring their real interdependence (in Fisher and Ury’s example it is physical) would be a bad idea.

But all interdependencies are not so obvious. As Wallace suggested of the tradeoff metaphor that Richard Nixon apparently favored ("it's all one ball of wax"), in fact the international system is better characterized as an intricate honeycomb.\textsuperscript{30} To add issues is thus to run the risk of increasing complexity, causing information or analytic overload or fear of unintended consequences, thereby burdening the negotiation itself with possibly significant costs. To subtract or separate issues, of course, can have opposite influences.

An attempt to force linkage, whether through unrelated, unexploited power or through intrinsic commitment leverage, may poison the negotiating atmosphere and, as discussed before, add new, undesirable attributes. The victim may regard the move as illegitimate and unethical. It may backfire. As de Callières noted, "Menaces always do harm to negotiation, and they frequently push one party to extremities to which they would not have resorted without provocation. It is well known that injured vanity frequently drives men to courses which a sober estimate of their own interests would lead them to avoid."\textsuperscript{31} Such a reaction seems more likely the more unrelated intellectually is the issue to the forced addition and the greater the magnitude of its possible effect. As a practical matter, it is probably easier to sustain a linkage that has a substantive connection either with the other (voluntary) subjects of negotiation or, at least, with the recognized goals of one party.

Even proposing issues for addition that may enhance a zone of possible agreement is subject to potential problems. Such issues may transform a simple, tractable bargain into a complex, uncertain one. Proposing some possibly beneficial trades among unrelated issues may engender more such suggestions, escalating the negotiation to include all possible aspects of a common relationship. This may not be objectionable a priori but it may make small, desirable deals unlikely.

This tendency may also lead to the creation of a stingy trading ethos, which becomes "I won't do anything for you unless I get something in return." During the formation of the European Coal and Steel Community, Jean Monnet actively encouraged an esprit communautaire; common interests were to be the focus rather than logrolling, package deals, or trades based on conflicting interests in separate areas. He used many techniques to induce joint problem solving and to build long-term relationships rather than to foster the habitual use of bartered deals for immediate advantage.\textsuperscript{32} Of course, apparent concessions now may be accompanied by the understanding and expectation that equity will be fostered in subsequent dealings. Recognizing that the relative importance of issues to each side changes over time may be the basis for building longer-term relationships.

Issue addition or subtraction can significantly affect the zone of possible

\textsuperscript{30} Wallace, "Atlantic Relations," p. 179.
\textsuperscript{31} De Callières, \textit{On the Manner}, p. 125.
\textsuperscript{32} \textit{Idem, How Nations Negotiate}, p. 119.
agreement in a negotiation. Other considerations, however, will also be relevant. Increased information or organizational burdens, unintended interrelationships among the joined issues, a clouded atmosphere for negotiation, or possible negative effects upon the long-term relationship of the bargaining parties—all may alter conclusions based on analysis limited to the substantive issues at hand.

2. Adding and subtracting parties

My central purpose in this article is to investigate the proposition that in an explicit negotiation one should not regard the issues and parties as fixed for analysis but instead should look upon them as variables. Thus far I have generally held the parties constant in order to examine some of the reasons for, and methods and results of, expanding or contracting the set of issues under negotiation. In the marketplace analogy, the same traders acted to force or entice each other into considering fewer or more types of commodities. I now keep the commodities the same in order to look at some of the means and ends of adding or subtracting traders.

Parties may be brought in or ejected by unilateral action of one side, by unanimous agreement, or by suitable votes of the original negotiators. Such parties also may be able to force their way into the dialogue by means of their leverage over the existing players or their stake in the issues under negotiation. Their participation may be explicit or it may be tacit. Their assent may or may not be required for a settlement but their influence during the deliberations may be significant. Sometimes such parties will be the natural concomitant of added or subtracted issues. A change in organizational level may bring in or exclude players with different motivations, orientations, preferences, attitudes toward risk, or collateral relationships with other participants.

Of course, the number of participants in a negotiation may vary for other reasons. The size of a delegation may change; it may acquire or discharge advisers; or the negotiators may create or draw on outside bodies—secretariats, technical commissions, consultants, and the like. Bargaining agents, mediators, arbitrators, as well as deceptive actors like shills or false bidders, may be engaged. Though these situations are of independent interest, I focus the following analysis on the addition or subtraction of parties who themselves can be considered direct or indirect “principals” in the bargaining.

a. Common reasons for adding or subtracting parties

Several fairly straightforward reasons for changing the parties in a negotiation merit brief mention. If one is seeking a nonproliferation agreement or a division of market shares, those players with a tangible influence on and interest in any ultimate deal will normally enter the game at some stage.
It is common for one side to bring in a third-party ally with some (possibly) unrelated influence on a current bargaining opponent. The Japanese auto-
maker Nissan was negotiating unsuccessfully with the Mexican government for permission to manufacture in Mexico. Bringing in the Japanese govern-
ment as an ally was a useful ploy. Since Mexico’s largest foreign-exchange earner at that time was cotton and Japan absorbed 70 percent of Mexican cotton exports, the implied threat to cut imports was sufficient to assure Nissan the necessary license.33 It is not necessary, of course, that an additional party have unrelated, unexploited power. One side can bring in new allies who simply add to existing power. Before the 1963 newspaper strike in New York, the publishers of nine newspapers formed a Publishers’ Association to bargain with the newly-forged “blood-brotherhood” of several unions in the Newspaper Guild.34

Third parties who have a variety of other relationships with the negotiators may be used to strengthen commitments arising from the negotiation. If either negotiating party were to renege on the bargaining agreement, the third-party agreement would be affected as well, possibly with consequences in several other areas. A commitment within a negotiation not to accept less than some settlement amount may be buttressed by a link to future or parallel negotiating parties (as was the case with issues). It is also possible to bring in parties to solidify an agreement or add legitimacy to a bargain or its implementation.

It is almost axiomatic that the more parties (and issues), the higher the costs, the longer the time, and the greater the informational requirements for a negotiated settlement. Manipulation of the parties can alter these characteristics. One of the most frequent comments about the long-running Law of the Sea conference was the “impossible” number of significant items to be negotiated among more than one hundred and fifty countries. Especially complicating was the fact that many of these countries had no “tangible” national interest in many of the questions. As a practical matter, the conference’s organization and procedures for reaching agreements eased this problem. Although all participants nominally had a say on all agreements, the principally interested parties frequently made deals in small groups. For example, negotiations to soften the impact of seabed mineral production upon land-based producers were primarily carried out by a small group with the United States and Canada (the largest land-based producer of nickel) as main figures. The final accommodation on the financial terms of contracts was reached in a four-country group. Separating issues and effectively sub-

33. Douglas Bennett and Kenneth Sharpe, “Agenda Setting and Bargaining Power: The Mexican State versus Transnational Automobile Corporations,” World Politics 32 (October 1979), p. 81. Of course, adding a party in this case may be interpreted as the means of adding an issue as in Case 1 of Section 2.

tracting parties served to reduce information requirements and strategic complexity, and, it was hoped, to create strong focal points for wider agreement. (This practice, of course, also greatly reduced the scope for cross-issue or cross-area trading as certain key negotiators came to work primarily on small subsets of the conference's questions.) In other cases, of course, the number of parties is radically reduced to allow agreement among a smaller group. The Soviet-U.S. Test Ban Treaty came about only after the eighteen-nation disarmament conference gave way to bilateral negotiations.

To recapitulate this quick enumeration of some important but fairly obvious reasons for manipulating the parties in a negotiation: addition of parties is likely when they have a tangible interest in or influence on the substance of the negotiation, may strengthen an existing coalition directly or by leverage from unrelated issues, or enable more binding commitments to be made. Subtraction of parties may take place for opposite reasons as well as to reduce complexity and information costs and to provide focal points for larger settlements.

I devote the remainder of this section's analysis to two general propositions on the addition and subtraction of parties to a negotiation. First, party addition or subtraction can significantly alter the zone of possible agreement among the original parties. Second, changing the parties may alter the strategic complexion of a negotiation.

b. Proposition: adding and subtracting parties can alter the zone of possible agreement among the original parties

This section adopts the point of view of the original participants. In three general situations negotiators might wish to bring in new parties or form coalitions to eject current or proposed participants. The first case involves the more or less active involvement of another party while the second and third might be considered passive alteration of the parties.

Case 1. Adding or subtracting parties who have an interest in a settlement may alter the original zone of agreement. Generally, if the settlement of a dispute has value to outside parties, the original negotiators may try to appropriate some of that value. Involvement of the other parties is one method. The added value may be a windfall to the original parties, if they would have agreed anyway, or it may significantly increase the inducement for them to come to terms. In either case, party addition is likely.

Recall my early example of two siblings loudly arguing over a single ice-cream cone and deciding to risk its summary confiscation by appealing to a parent. Their hope is that the parent will oblige by getting them a second cone, buying peace into the bargain. An externality in the original situation (the noise of their quarrel) provides the basis for the desired (or undesired) entry of other parties.
The United States clearly perceives a strong interest in Egypt's and Israel's settling their differences. Thus it is hardly surprising that the United States interjected itself into the Middle East negotiations along with substantial offers of economic and military assistance. If some existing parties—as the Soviet Union, in the comprehensive plan envisioned in the Geneva accords—are perceived as having an interest in no settlement, they may be frozen out of the negotiation for analogous reasons.

It is not necessary for an added party to have a "tangible" interest in the substance of a settlement. There may be an institutional reason, as was the case with the World Bank in the Indian-Pakistani negotiations over the Indus River. The Bank had financial resources and technical expertise available to facilitate a settlement.  

Case 2. Adding parties may spread or eliminate risks from the bargain of the original participants. An earlier section considered the possible advantages of adding issues to exploit risk dependencies. Separate negotiations on rain umbrella and sultani oil concessions could be combined; the resulting "diversified" issue in a single negotiation would be worth more to all parties than when the questions were separate. Now, consider the reverse situation in which the issues (which involve inherent uncertainty) are held constant while parties are added to spread or eliminate original risks.

Two countries may be negotiating over the construction of a risky project, say an experimental energy technology system with an agreed chance of success estimated at one-half. For expositional purposes, assume that each country's risk attitudes toward such a project can be described simply: each would be willing to risk losing $250 million for a possible $500 million gain but an even chance of losing $375 million against a $750 million gain is too much risk for either to bear. Say that the projects' costs are known to be $750 million, and its benefits (if successful) would be $1.5 billion over cost. Under such circumstances the two-country bargaining would be inconclusive, while the addition of a third similar party could spread the risk in a way that would be beneficial to all. Each project sponsor would be happy with a $250 million cost balanced by a $500 million share of potential benefits. Addition of the third party would allow mutually beneficial agreement.  

35. Fisher and Ury, Principled Negotiation, p. 90.
36. One could observe technically that the sum of the parties' risk premia may decline as the number of parties increases. Assume that the owner of a business has a negative exponential utility function with risk-aversion parameter $\gamma$. The uncertain end-of-period net value of his business is normally distributed with mean $\mu$ and variance $\sigma^2$. He is negotiating with a possible buyer for the business who also has a negative exponential utility function with risk-aversion parameter $\gamma_0$, where the buyer is more risk-averse than the seller ($\gamma_0 > \gamma$). The seller's certainty equivalent (CE) is $\mu - (\gamma/2) \sigma^2$, while the buyer's certainty equivalent (CE) is $\mu - (\gamma_0/2) \sigma^2$. There is no possible zone of agreement since the seller wants more than the buyer will offer (CE, > CE,). But if the buyer brings in identical partners, who will split up the proceeds evenly, their collective certainty equivalent (CE) will be $n(\mu/n - (\gamma_0/(2n^2))\sigma^2)$ or $\mu - (\gamma_0/2n)\sigma^2$. As $n$ increases, CE, $\rightarrow \mu$ and a positive bargaining range for the sale price opens up of size (CE, --
Negotiation of the financial terms of mineral agreements in developing countries is often rendered very difficult by the price uncertainty of the mine’s ultimate product. In a market slump, large losses could result; a boom may send profits to extreme levels. The mining taxation system can significantly affect the risk. Trying in advance to decide the proper tax mixture and level of relatively fixed charges (which shift price risk to the company) or contingent charges (such as profit shares, which shift price risk to the country) may be an extraordinarily difficult task if both parties are risk-averse. One solution to this problem could be to sell bonds to relatively less risk-averse third parties in specially created markets. These bonds could be denominated in the price of the commodity. The (certain) proceeds of the sale could then be the subject of bargaining. Each side, of course, might elect to hold some proportion of the bonds. By indirectly involving others, such bonds could mitigate the price risk inherent in the agreement, opening or widening a zone of agreement.  

Case 3. Addition or subtraction of parties in a negotiation over collective or other special goods may alter the zone of agreement for the original participants. Special characteristics of the negotiating issue in question may lead to inclusion or exclusion of parties. Three examples are particularly noteworthy.

The inclusion of additional parties may ease negotiations over the establishment or maintenance of a collective good. A collective good has the property that it is difficult to exclude nonpurchasers of the good from its benefits but that the benefits can be extended to additional parties at relatively low marginal cost. Negotiators trying to set up or share the costs of a defense alliance, for example, are confronted with such a situation. Alliance benefits—defense against an attack—may readily be extended to like-minded countries. Barring cases of special added geographic vulnerability, new members should lower the costs to other members. A larger alliance may also reduce the probability of attack. The addition of as many parties as possible may enhance a zone of agreement in such a situation by lowering costs and increasing benefits.

Several states or nations in a region may be negotiating to build a regional

\[ CE_n = (\gamma_n - \frac{\gamma}{n}) (\sigma^2/2) \]  


37. The idea, advanced by Donald Lessard in a Harvard Business School finance seminar, that developing countries might turn to financial markets to shed risk in addition to diversifying their real economies or trying to manipulate markets suggested this bargaining application.

power-generating plant. Economies of scale tend to be considerable in power
generation. Thus, in order to enjoy the lowest average costs, the group may
seek to add members in the early stages. Their presence may facilitate at-
tainment of an original agreement.

Finally, consider an ongoing, tacit negotiation in a collusive oligopoly.
What the participants might dub the “collective good”—the higher price
from restricted production—has benefits in fixed supply. Here is a situation
in which the participants would like to have as few members as possible and
perhaps would seek to drive smaller rivals out of the ongoing bargain and
erect barriers to subsequent entry.  

Two observations about Cases 2 and 3 are worth making. First, the “added”
parties could be new active participants or they could be passively involved,
possibly through some outside connection to one of the original negotiators.
Second, the rationale offered for adding parties could equally well serve as
reason for expanding the coalition if the original negotiation were defined
to include potential participants. One necessary condition for the success of
a coalition is usually taken to be that it can do better (“create more value”)
than can its members individually or in competing coalitions. The economic
factors of Cases 2 and 3 may create potential for the addition of parties that,
for some reason, were not regarded as part of the original game. The phrase
“for some reason,” which may refer to psychological, institutional, political,
historical, or other factors, is the main difference between this analysis and
traditional analyses of coalition formation in a game initially defined to
include these potential participants. Whether this phenomenon is regarded
as adding parties or aligning members in coalitions, the same underlying
factors are at work.

c. Indirect addition of parties can affect the strategic complexion of a
negotiation by improving or worsening the consequences of no agreement

Raising the cost of no agreement to an opponent can positively influence
one’s bargaining position. This may be accomplished by indirect addition
of a party that one’s opponent finds antithetical. Shortly before World War
II, the Soviets bargained openly with the British and French for a mutual-
assistance pact against German aggression while they secretly negotiated a
nonaggression treaty with the Germans. The open Anglo-French discussions
significantly enhanced the Soviet position in these latter talks.  

More recently, the 1971 Maltese-British negotiations over renewed base rights provide an
instructive example. To obtain radically improved terms, the Maltese made
highly visible overtures to the Soviets about locating one of their bases in

39. See Mancur Olson, The Logic of Collective Action (Cambridge: Harvard University Press,
Malta as well as to Libya and other Arab states for large assistance payments in return for Malta's neutrality. Not only did this put pressure directly on Britain but NATO anxiety, which the Maltese carefully cultivated, served indirectly to increase the pressure. In addition, other NATO members ultimately agreed to provide supplemental aid to Malta above and beyond the terms of the British settlement. In these cases, the costs of failing to reach a favorable settlement were sharply increased for the opponent by the indirect inclusion of other parties.

When envisioning a future negotiation, one side may indirectly use additional parties to change the expected nature of this encounter and make future undesirable action by the opponent much more costly. In the early 1960s, a negotiation about the expropriation of Kennecott Copper's major Chilean mine, El Teniente, seemed increasingly likely. Kennecott sought early on to involve a variety of other parties to change the nature of the upcoming bargain from a one-time, bilateral encounter to a potentially long-term, multilateral one.

[Kennecott] offered to sell a 51 percent interest in El Teniente and turned to the Export-Import Bank and the proceeds of the sale of equity to finance expansion [of the mine]. The loan was guaranteed by the Chilean government and made subject to New York law. It insured as much as possible of its assets under a U.S. guarantee against expropriation. The output was to be sold under long-term contracts with Asian and European customers, and the collection rights were sold to a consortium of European banks and a consortium of Japanese institutions. The result was that customers, governments, and creditors shared Kennecott's concern about future changes in Chile. When Chile acted to expropriate the operation, Kennecott was able to call these parties in on its side.

Not only was there a risk-spreading aspect to these moves but the involved parties could possibly take actions to affect the Chilean choices. Moreover, Chile was likely to have future dealings with these entities. Although the additional parties' initial role was passive, their involvement was deliberately sought and their influence was significant. Similar attempts to involve a variety of outside parties in what otherwise might be strictly bilateral exchanges are embodied in the terms of many modern mineral agreements.

This analysis again skates very close to that of mainstream game theory,

wherein the outcome of bargaining among one set of players depends on the other potential agreements by other (potential) competing or overlapping coalitions. Instead of calling Malta’s overtures to Eastern Bloc and Arab countries “adding parties” to the British-Maltese negotiation, one could just as accurately refer to that case as exploiting potential coalition formation. The conventional interpretation, however, would require one to analyze the nonaggression negotiations in the first instance as the “Anglo-French-German-Russian negotiations”; the Kennecott-Chile dealings would likewise have to be specified initially as involving the whole range of subsequent parties. The two formulations differ significantly in analytically designating the original situation as bilateral or multilateral. The context will often indicate which interpretation is more suitable. Sometimes the actual and potential parties are obvious at the outset and the conventional interpretation readily applies. Especially in protracted negotiations, however, the perceived possibilities of issue or party alteration normally change over time with new information, interpretations, or competitive moves. In such cases an approach akin to mine may provide more insight. In either interpretation, however, the strategic implication is similar: the first side’s cultivation of third parties can change the nature of the original bargaining by lessening the attractiveness of non-agreement for the second side or, sometimes, by enhancing for itself the alternatives to a negotiated agreement.

3. Conclusions

My first contention is that the parties and issues initially taken to comprise a negotiation are themselves typically subject to strategic manipulation. As such, the standard analysis of negotiations should concern whether adding or subtracting issues or parties is desirable or appropriate. A simple graphical approach may assist the analysis.

In the first section I showed how adding issues can yield one-sided gains to the exercise of power. Such power can derive from an unrelated area or it can come from successful commitment tactics within the negotiation. This “linkage through leverage” is a traditional theme in the study of international relations. The same sort of power may be used to keep an item off the negotiating agenda.

In a more positive vein, issue addition can yield joint gains that enhance or create a zone of possible agreement. Separation of issues may preclude any chance of individual settlement while combining issues may make advantageous agreement possible. I have explored three ways in which this might happen: adding differentially-valued, unrelated issues; bringing in items as side payments to overcome distributional obstacles; and putting together issues with positive interdependence (such as complementarities, interactions, or risk-reduction characteristics). The mechanisms underlying these features
of issue addition explain some of the attractions of package deals and single negotiating texts. Analysis of issue addition also suggests that bottom lines for negotiations should be drawn with all the issues in mind and helps to explain why sequential resolution of items in negotiation can preclude some beneficial settlements.

Unfortunately, combining issues may also reduce or destroy a zone of possible agreement. Adding a very divisive issue to a negotiation and requiring joint settlement may prevent resolution of otherwise tractable issues. In some cases, the combination of individually resolvable issues may wreck the chances of settling any of them. A variety of other reasons—negative interactions, adding issues of interest only to a subset of the negotiators, or stimulating the formation of opposing coalitions—may militate against linkage. Diverse other reasons for adding issues include solidifying coalitions, adding desirable parties, or strengthening commitments to positions, bottom lines, or negotiated settlements. Subtraction or separation can have opposite effects.

Factors that complicate the manipulation of issues may, of course, be present. Unintended complexity, unforeseen interrelationships, and organizational and informational requirements may accompany an expanded agenda. Particularly if there is an element of coercion, the negotiating atmosphere may be poisoned. (On some occasions, of course, one or another side may desire these results.) Small, tractable bargains may repeatedly escalate into large, intractable ones as a trading ethos takes hold. Needless to say, long-term relationships may suffer in the process. The many examples of mutually profitable issue addition cited, however, make the obvious point that these undesirable consequences are not necessary outcomes.

Just as the issues may be manipulated, so with the parties. Parties are commonly added that have influence on or interest in the substance of the negotiation, that may strengthen a coalition directly or by leverage from other areas, that can enable commitments to be made, or that may lend legitimacy to a bargain or aid in its implementation. The zone of possible agreement may be altered by outside entities that value or dislike a settlement among the original parties. Essentially passive addition of parties may spread or eliminate risk, exploit economies, or lower the cost of a collective good. All these actions may facilitate advantageous agreement. Party subtraction has symmetrical functions.

The indirect addition of outside parties can significantly affect the original negotiations. If agreement with a third party suddenly becomes the alternative to agreement with the original bargaining partner, one's position in the first negotiation may improve. Since settlements in one group depend on potential agreements in other (potential) groups, it is not surprising to see cultivation of these other groups in order to give the alternative the appearance of greater likelihood. Finally, if one side expects possible future negotiations with the other side, it may try to involve other parties indirectly. The added parties
may serve to raise the costs of subsequent action by opponents and position the first side more advantageously.

Across these varied cases there are similarities. Analysis should not take the parties and issues in a negotiation as given. A variety of means, ends, and outcomes are possible from their manipulation. Many of these can be analytically related by simple devices. Formally, of course, if the original definition of the negotiations were expansive enough, the resulting “super-game” would be amenable to conventional analysis and the notions of adding parties and issues would be superfluous. But this would be to define the phenomenon out of existence. As Kenneth Oye notes, “tactical issue linkage is exceedingly difficult to predict.” “Linkees” have failed to anticipate the OPEC embargo, the Third World link between Special Drawing Rights and development assistance, the Eisenhower link between the Suez affair and monetary policy, and so forth. Analysis surely does not wholly negate Oye’s observation that “no clear criteria have emerged for predicting patterns of issue linkage.” Taken together, however, the foregoing propositions offer one approach to expanding stylized negotiation analysis a useful part of the way toward the game of all possible players and subjects.