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A 3-D View Of Negotiation Analysis: Interpersonal (Tactics), Substantive (Dealdesign), and Architectural (Gamecrafting)[1]

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[1] Comments welcome; please contact me at jsebenius@hbs.edu. I would like to thank David Lax, my long-time co-author and collaborator, with whom many of these ideas have been jointly developed, both conceptually but especially in terms valuable to practice; see our forthcoming book, *3-D Negotiation: Creating and Claiming Value for the Long Term*. I am grateful also my colleagues in the Negotiation, Organization, and Markets unit at Harvard Business School, whose comments on seminar versions of these concepts have been valuable. Finally, I thank the Executive Committee of the International Association of Conflict Management, which invited me to give the keynote address to the 2002 IACM meeting, which articulated this 3-D conception and stimulated useful comments.

***Abstract**: Much negotiation research shares two major characteristics: an interpersonal process orientation, whether "strategic" or more behaviorally faithful, and the assumption of a fixed "game" for purposes of analysis. Taken together, this focus on interpersonal process in the context of a fixed game comprises the "first dimension" of negotiation analysis ("1-D, tactics, at the table"). This article argues for a fuller, three-dimensional, approach that complements the study of process with that of substance ("2-D, dealdesign, on the drawing board") and of a fixed game with a variable one ("3-D, gamecrafting, away from the table"). After presenting this 3-D framework as a whole, this article moves from a 1-D process focus to explore the second dimension, dealdesign, arguing that 1) potential joint gains exist in different classes of negotiating situations as a function of underlying structural characteristics, 2) corresponding to such distinct classes of situations are characteristic forms of agreements that can realize potential joint gains; 3) in some, perhaps many cases, powerful underlying principles can unify apparently disparate classes of value-creating agreements; and 4) such classes of value-creating agreements can, in principle, be analyzed independent of the process of interpersonal interaction. An extended example suggests how a "differences" conception can unify many apparently disparate areas of joint gain and forms of agreement (trades, unbundling, packaging, logrolling, contingent agreements, risk-sharing mechanisms, intertemporal reallocation mechanisms, etc.). Among many negotiation researchers, less well-studied sources of joint gains with associated forms of agreement involve social dilemmas, escalation games, insecure contracts, swaps, financial and real options, etc. Turning from 1-D and 2-D analysis, the "fixed game" assumption is then relaxed to explore the importance of 3-D "gamecrafting," the actions of one or more (potential) protagonists to set up or change elements of the game itself. The game itself may be malleable and is often best analyzed as "that which the parties act as if it is," rather than as a fixed construct. Even when the changed game cannot be specified in advance, useful analysis is possible. Some of this work uses conventional, "Cartesian" 1-D approaches; others employ complementary methodologies from "Baconian" exploration and mapping, to the creation of useful taxonomies, frameworks, and mid-level generalizations, and to Raiffa-inspired prescription. Several classes of 3-D propositions are discussed and illustrated: 1) demonstrating the existence of different classes of 3-D move and their effects on the nominal game, 2) explaining the workings of key structure-shaping mechanisms and dynamics (e.g., issue/game linkage and separation, "addition and subtraction" of parties, optimal sequencing and path dependence, coalition building and breaking, momentum-building and action-forcing, informational shifts involving private and common knowledge, shaping the nature of one's role in the process, issue-framing, negotiation design, etc.), and 3) analyzing outcome effects of 3-D gamecrafting moves. Finally, a number of advantages flowing from adopting this 3-D perspective are described.*

Much negotiation research shares two major characteristics: 1) a process orientation and 2) the assumption of a fixed "game" for purposes of investigation. These twin attributes—amounting jointly to a focus on "interpersonal process at a set table"—apply to the major research traditions in negotiation analysis: positive (descriptive), normative, and prescriptive (Bell, Raiffa and Tversky, 1988). In this article, , I argue for a fuller, three-dimensional, approach that systematically complements the study of process with that of substance ("2-D, dealdesign, on the drawing board") and of a fixed game with a variable one ("3-D, gamecrafting, away from the table").

Characteristic #1: A Process Orientation. By a "process orientation," I mean a systematic focus on interpersonal interaction (including its individual psychological antecedents). In economic and game-theoretic traditions, interpersonal process is mainly analyzed as "strategic" interaction, that is, canonically rational, individual optimizing behavior typically implied by von Neumann Morgenstern utility theory and the concept of Nash equilibrium (See, e.g., Aumann, 1989; Myerson, 1991). This approach has generated considerable insight into offers, counteroffers, patterns of concession, information revelation and transmission, learning, the credibility of commitments and threats, as well as the existence, stability, uniqueness, and efficiency characteristics of equilibria in various one-shot and repeated structures. In behavioral traditions, largely based on cognitive and social psychology, considerable insight has likewise resulted from an interpersonal process focus on the dynamics of communication, trust, relationships, and escalation, as well as on the interaction of perception and misperception, attribution, inference, biases, scripts, cross-cultural characteristics, and influence strategies. (For surveys, see, e.g., Neale and Bazerman, 1991; Bazerman, Curhan, Moore and Valley, 2000) Hybrid traditions, such as experimental economics, behavioral decision and game theory, typically relax strict rationality assumptions but retain a focus on the process of interpersonal interaction when studying negotiation (Kagel and Roth, 1995; Camerer, 1997). This emphasis on process does not exclude outcome predictions; rather, the dominant focus is on how various kinds of interactions play out and often lead to particular results.

Characteristic #2: A Well-Specified Situation. Typical of good social science, both behavioral and strategic approaches share a second characteristic: the assumption of a specified or fixed game for purposes of analysis. Experimental design requires careful specification of the negotiating situation in order to vary the attributes of interest for study. Mathematical investigations of strategic interaction require a well-specified situation in order to draw inferences, prove theorems, and make predictions. Indeed, many researchers take the development of powerful explanatory laws and predictions from precisely specified antecedent conditions as the essence of their scientific work. As Ariel Rubinstein (1991: 923) observed in an influential *Econometrica* article, "[f]or forty years, game theory has searched for the grand solution," that would achieve "a prediction regarding the outcome of interaction among human beings, using only data on the order of events, combined with a description of the players' preferences over the feasible outcomes of the situation." That well-specified situation—informally, call it a "set table"—serves as the stage on which interpersonal interactions play out.

After contending that current work in fact shares the two characteristics described above, I sequentially explore the implications of relaxing Characteristic #1 (an interpersonal process focus) and then Characteristic #2 (the fixed game assumption). The case for the proposed 3-D characterization, defined in more detail below, thus rests on establishing the following argumentative steps, which drive the organization of this article.

First, the dominant emphasis of current negotiation current negotiation research, which I characterize as "1-D," is on interpersonal process within a well-specified game or situation.

Second, relative to 1-D work, complementary "2-D" exploration of the substance of negotiated agreements has been far less well-studied by negotiation researchers and would benefit from greater systematic focus. 2-D analysis investigates 1) the deeper conditions under which joint gains potentially exist; and 2) the general principles underlying the design of cooperative arrangements appropriate to different underlying conditions, that, ideally, create value on a sustainable basis for the participants. In common with 1-D work, the underlying situation or game is normally taken as fixed for purposes of 2-D analysis. Yet, in principle, determining the antecedents of joint gains and the classes of agreements that can realize them can be carried out independent of 1-D process considerations.

Third, the essence of many important negotiating situations can be found in the conscious actions of one or more (potential) protagonists to change elements of the nominal game itself or to set it up in the first place. Such elements include the parties, issues and interests, no-agreement alternatives, "rules of engagement," information and expectational structure, as well as perceptions of the situation. I will refer to efforts to change the process and/or substantive elements of the game, that is, to alter its scope and sequence, as gamecrafting, or the third dimension ("3-D") of negotiation analysis.

The first assertion about the central (process) tendency of current negotiation work is empirical. The second calls for a judgment about whether substance has been neglected relative to process and, if so, whether explicit focus on substance would valuably complement process-oriented investigations. Nothing in the first two "dimensions" calls for a departure from familiar and traditional methods of social science, whether axiomatic or experimental, namely the careful and full specification of a fixed situation in order to investigate one or more of its elements. Yet in relaxing the "fixed game" assumption, I want to highlight in advance how the third dimension of the proposed 3-D schema raises a potential methodological challenge: how can one say anything systematic, let alone "scientific," about a phenomenon that cannot be (or is not) specified *a priori*? While the last part of this article will mainly attempt to demonstrate by example the potential value of 3-D analysis in negotiation, it will also briefly engage this methodological issue.

The reality of negotiations in practice both motivates and buttresses the intellectual structure of this argument for a 3-D approach. Consider the judgment of former U.S. Special Trade Representative Charlene Barshefsky. Following a successful private sector career mainly representing U.S. firms, she later negotiated as a Cabinet-rank official with literally hundreds of global and national companies; with most

governments and many cultures worldwide; with interest groups and non-governmental organizations concerned with environment, human rights, and labor; as well as with diverse factions within the U.S. government and the Congress. (Hulse and Sebenius, 2001a b 2003 (forthcoming)) After spearheading dozens of agreements on trade in goods, services, and intellectual property, Barshefsky characterized the essence of negotiating success in 3-D terms:

> . . .tactics at the table are only the clean-up work. Many people mistake tactics for the underlying substance and the relentless efforts away from the table that are needed in order to set up the most promising possible situation once you actually face your counterpart. When you know what you need and you have put a broader strategy in place, then negotiating tactics will flow. (Hulse and Sebenius, 2001b: 11).

In short, an important message from the world of practice suggests that, beyond interpersonal process at a fixed table (1-D), it is also vital to take into account both substance (2-D dealdesign) and actions away from the table to favorably change the game itself (3-D gamecrafting).

Part I: The Proposed "3-D" Characterization as a Whole

For simplicity, I have labeled the currently dominant emphasis on interpersonal process at a (set) table as the "first dimension (1-D)" of negotiation analysis. Let me offer a few examples typical of 1-D propositions. Consider the widely studied, two-party, two-move "ultimatum game," in which, without communication, a "proposer" suggests a particular division of a monetary amount. The "responder" then either 1) accepts the proposed division, in which each party receives the indicated share and the process ends, or 2) rejects it, in which case the game ends and neither party receives anything. The standard game-theoretic prediction for monetarily motivated players is that the proposer will offer the minimum positive share to the responder, who will accept it (since, loosely, getting something is better than nothing). By contrast, robust experimental results suggest that mean offers by proposers are typically 40 to 50% of the total and that offers less than 20% are often rejected. (Camerer and Thaler, 1995) Both the *a priori* game-theoretic and experimental propositions typify 1-D analysis since their emphasis is on a particular, stylized process of interaction (propose, respond) within a well-specified structure.

Of course, the interpersonal process need not be so highly stylized in rigorous 1-D investigations. For example, McGinn and Keros (forthcoming) analyzed transcripts of subjects with various levels of social embeddedness (e.g., friends, strangers) negotiating in an unstructured manner by various media (face-to-face, by e-mail or phone). Then, via coders doing content analysis, the researchers identified and characterized distinctive "scripts" toward which the participants improvised as a function in part of their social ties and the communication media.

A standard graphical representation of a negotiation can serve as a baseline against which broader classes of 1-D (and, in subsequent sections, 2-D and 3-D) moves can be highlighted. Imagine that two negotiators have thought hard about their underlying interests in different possible settlements of the apparent issues. Further, suppose that they have a relatively clear, if possibly changing, assessment of their

tradeoffs on the issues, have compared them to the value of their best no-agreement alternatives. Each has a sense of any "rules of engagement" that govern their interaction. From the viewpoint of each party a set of possible agreements has been envisioned. Assume that an outside party were privy to the results of these evaluations by each side, along with the distribution of information about interests, beliefs, no-agreement options, and possible actions; these evaluations neither likely to be the same for each party nor common knowledge to them.

This situation can be represented as in Figure 1 in which moves "east" are improvements for Party 1 and moves "north" are gains for Party 2; "northeast" moves are simultaneously good for both sides and can be said to create value. The origin represents the value to each side of failing to reach agreement; each side's best alternative to agreement implies the location of this point. The "perceived possibilities frontier" in the northeast part of the graph represents the evaluations of the set of those possible agreements on the issues that could not be improved on from the standpoint of either party without harming the other. In general, neither side knows the location of the frontier, only theoretically that it is there. The entire shaded region--bounded by the two axes and the frontier--is the "zone of possible agreement (ZOPA)." It represents the full set of agreements that are better for both sides, in terms of their interests, than no deal (point O). In general, each party has its own perceptions of the ZOPA. (In a pure price, "win-lose," or "value-claiming, negotiation, with no room for joint gains beyond the fact of agreement, the shaded region would collapse to a diagonal frontier.)

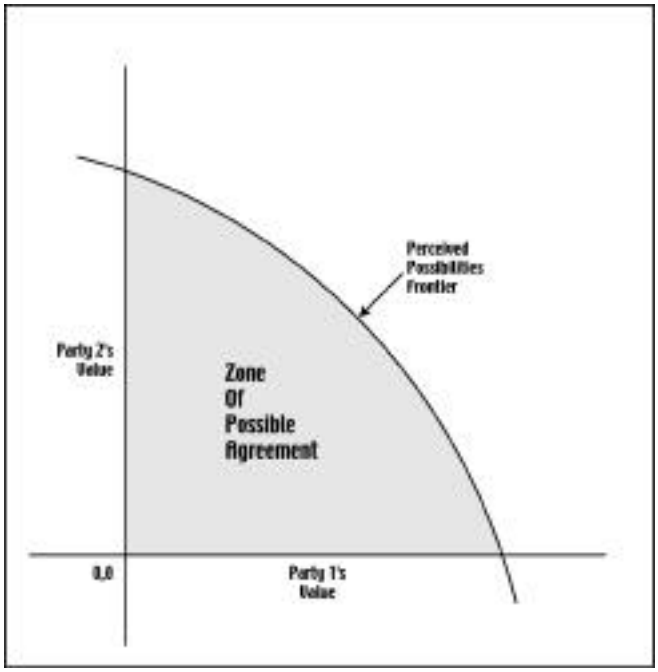

Figure 1: Representation of a Fixed "Game"

Discovering and realizing what economists call Pareto-improvements and what are popularly understood as "win-win" solutions has been a central pre-occupation of researchers and practitioners for well over two decades. Relative to the original perceived

ZOPA, discovery of a mutually beneficial agreement, or joint gain, can be represented by the region bounded by a dashed line in Figure 2. Following Axelrod's (1967; 1970) axiomatically derived measure of the degree of "integrativeness" inherent in a situation, the game in Figure 2 embodies a lower "conflict of interest" that does Figure 1.

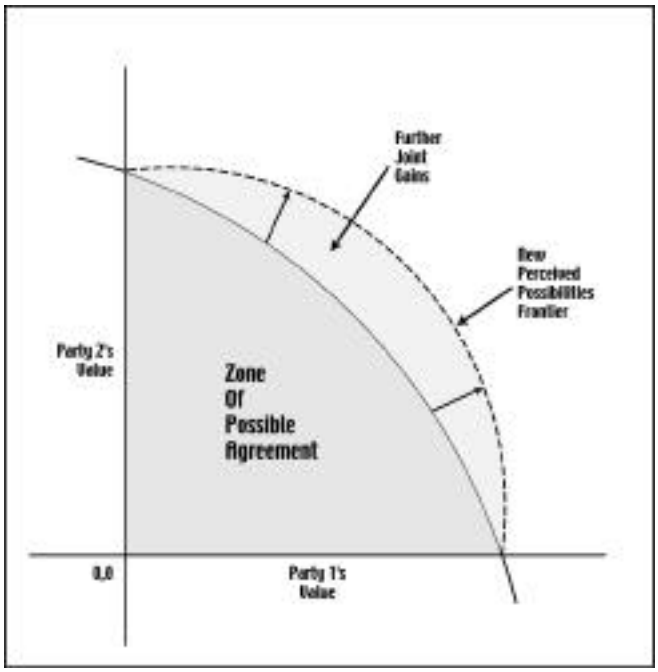

Figure 2: Finding Joint Gains Relative to the Original Negotiation

The great bulk of the analysis and advice for finding such joint gains has been of the 1-D process variety, including the psychological antecedents of direct interpersonal interaction. For example, cognitively, potent "fixed pie" and related biases reinforce a "zero-sum" worldview that obscures and prevents joint gains (Bazerman and Neale, 1991; Thompson, 1991). "Strategic" barriers explain how competitive moves to claim value individually drive out the cooperative moves necessary to create value jointly (Myerson and Satterthwaite, 1983; Lax and Sebenius, 1986). Indeed, a wide range of barriers can frustrate successful negotiations (Arrow, Wilson, Ross, Tversky and Mnookin, 1995). Advice to overcome such barriers includes typically process suggestions such as building trust, listening, focusing on underling interests rather than bargaining positions, giving away some information to stimulate reciprocal revelation, broader tit-for-tat approaches, enhancing creativity, as well as special procedures such as making multiple simultaneous offers and "post-settlement settlements" (Raiffa, 1982; Lax and Sebenius, 1986; Fisher, Ury and Patton, 1991; Neale and Bazerman, 1991; Thompson, 2001).

These examples hardly span the range of existing research; rather, I offer them to illustrate characteristics common to 1-D studies: a well-specified situation within which the emphasis is on interpersonal interaction and its psychological antecedents. Given the

central tendencies of negotiation scholarship, it is hardly surprising that a 1-D orientation also pervades advice to students and practitioners such as that in Leigh Thompson's MBA textbook, *The Mind and Heart of the Negotiator* (2001), which is closely driven by negotiation research (as are others such as Bazerman and Neale's (1991) *Negotiating Rationally*). After an introduction and preparation advice, the chapter titles themselves are revealing of the field's central orientation toward process; they include "distributive negotiation: slicing the pie," "win-win negotiation: expanding the pie," "developing a negotiating style," "establishing trust and building a relationship," "power, persuasion and ethics," "creativity and problem-solving in negotiations," "cross-cultural negotiations," "tacit negotiations and social dilemmas," and negotiating via information technology;" appendices include "are you a rational person?" and "nonverbal communication and lie detection." Not only do the chapter titles mainly evoke interpersonal interaction and process, so does their treatment, reflecting the field's underlying research preoccupation. Likewise, the (more serious) popular literature largely mirrors this focus: *viz*, *Getting to Yes* (Fisher, Ury and Patton, 1991), *Getting Past No* (Ury, 1991), *Difficult Conversations* (Stone, Patton and Heen, 1999).

As central and fruitful as such 1-D work has been and will certainly continue to be, however, this emphasis tends to focus attention of negotiation scholars away from two less well-explored "dimensions" of great theoretical and practical importance: the substance of negotiated outcomes and actions to set and change the "game" itself.

2-D: The Substance of Negotiated Outcomes. As distinct from the 1-D focus on process, the second dimension of the proposed 3-D schema addresses the substance of negotiated agreements: specifically, 1) under what conditions do joint gains exist? and 2) what are the general principles underlying the design of cooperative arrangements that, ideally, create value on a sustainable basis for the participants? In common with 1-D work, the underlying situation is normally taken as fixed for purposes of 2-D analysis.

In this second dimensional conception, "substance" refers to the characteristic forms and classes of agreements appropriate to negotiating situations with distinctive attributes as well as the underlying conditions that give rise to the possibility of joint gains. Once the parties to a negotiation, their interests, their beliefs, their capabilities, and the broader situation has been sufficiently well-described, analysts can often figure out, structure, and write down the sets of agreements that could create more value for the parties than they could realize through their best no-deal alternatives. In principle, this can be done independent of 1-D interpersonal process. David Lax and I (2002) have referred to this dimension as "dealcrafting" or "dealdesign."

With reference to Figure 2, consider the region of the new zone of possible agreement labeled "further joint gains." A 1-D orientation would investigate how, or by what interactive process, the parties might grope toward these joint gains. By contrast, a 2-D analysis would analyze the underlying substantive basis for the potential existence of joint gains and the forms of agreement that might bring them into being for the parties.

(Note that, by "substance," I do not mean systematic study of various contexts or policy domains in which the negotiations are embedded such as financial markets, the legal system, the physical environment, specific industries, governmental institutions, or

the international economy—as valuable as such contextual knowledge may be for analysis.)

Dimensions one and two--process and substance--clearly underpin effective negotiation. Many experienced negotiators concentrate their preparation on crafting the best potential deals to explore "on the drawing board" and the most promising tactics to adopt once they are "at the table," facing the other side. Yet, compared with the reality of many negotiations, something vital is still missing from this two-dimensional conception focused on a fixed situation at the bargaining table.

The Third Dimension: Acting "Away from the Table," to Set up or Change the Game Itself. Who sets up the negotiating "table" in the first place or specifies the "game" within which the process and substance are to be played? The game itself is often not simply a given, but can emerge from conscious efforts to shape it. Actions by one or more players frequently determine the third dimension: which game is to be played, or, more basically, its scope and sequence. Elements of the scope and sequence include the parties, issues and interests, no-agreement alternatives, "rules of engagement," information and expectational structure, and perceptions of the situation.

These elements comprise the architecture of the game itself, its "scope and sequence." As later sections of this article will demonstrate, characteristic changes in the game can be represented as characteristic shifts in the elements of Figure 1. And, as I will show, in the world of practice, the best negotiators often function as entrepreneurs, playing a wider, 3-D game with the potential value to be created as their guiding beacon. Not only do 3-D negotiators play the game as given, they seek to design and change it to be most amenable to success. Arguably, their research counterparts have a rich 3-D lode to mine beyond the work that has already been done in this dimension.

Why This 3-D Approach? This 3-D approach thus comprises 1-D interpersonal process (behaviorally faithful as well as canonically "rational") and 2-D substantive outcome, both under the assumption of a fixed game, as well as a third dimension that opens up once the game itself can be varied. Informally, these dimensions correspond to "interpersonal interaction at the table," "dealdesign on the drawing board," and "changing the game away from the table."

A few advance caveats: (1) I intend the language of "dimensions" to imply a cumulative approach; a fully dimensional analysis includes all three elements. The second and third dimensions do not supersede the first; they complement it. Moreover, these are not three alternative "models" of negotiation, but increasingly complete and complementary views of the phenomenon. (2) The language of "dimensions" is intended to be usefully evocative, not mathematically precise; in particular, the three dimensions are neither mutually exclusive (there is overlap, to be discussed) nor collectively exhaustive (I am sure). (3) And, emphatically, I do not claim to have "discovered" 2-D and 3-D analysis. As I will show, plenty of 2-D and 3-D work exists and much more is underway. Instead of a case for doing this work at all, I will argue for doing substantially more of it as well as for the value of being explicit methodologically about what is done.

Having in the present section briefly sketched and discussed the proposed 3-D framework as a whole, the balance of this article will sequentially elaborate the rationale and content of the second and third dimensions. In the course of this deeper development

of each proposed dimension, I will offer case instances and sample analytic propositions that seem especially well suited to 2-D and 3-D consideration.

Part II: 2-D in More Depth: The Substance of Negotiated Outcomes

The most fundamental reason why people negotiate is to realize greater *value*, whether economic or non-economic, through the potential of cooperative action embodied in agreement than they could otherwise achieve through their best no-agreement option (whether that is to walk away, do without, make rather than buy, go to court, strike, cultivate an alternative alliance partner, or the like). If interpersonal interaction can be understood as 1-D process, value can be understood as 2-D substance. More specifically, if value is both the objective and metric for negotiation, what theory accounts for the value-creating potential of different classes of situations as well as the nature of agreements that promise to realize that value for the parties? Indeed, do agreements exist in any systematic forms? If so, what are their antecedents and characteristics?

In simple economic transactions, the answer to these questions isn't worth much theorizing; if prices exist that are both lower than a buyer could get elsewhere and higher than a seller could otherwise fetch, there is a zone of possible agreement within which a "surplus" drives mutually beneficial exchange. The negotiators realize this economic surplus relative to no-trade by agreement on any price in the zone; varying the price merely reallocates the (fixed) value-added between the parties by a "distributive" or "value-claiming" process (Walton and McKersie, 1965; Raiffa, 1982; Lax and Sebenius, 1986). By contrast, as Figures 1 and 2 illustrate, simultaneously improving the value of agreements for both (all) parties—relative to no-deal or to currently contemplated agreements--at the expense of no one involves "integrative bargaining" or "value creating" to generate joint gains.

As the previous section suggested, 1-D analysis mainly offers process suggestions for uncovering the potential for substantive joint gains, which many analysts have argued to be ubiquitous and often unexploited (e.g., Deutsch, 1973). Yet consider the plight of a pair of deadlocked 1-D negotiators, hypothetical but typical, who have assiduously sought process-focused advice. An entrepreneur-seller, genuinely optimistic about the future prospects of her fast-growing company, faces a potential buyer who truly likes the company but who is much more skeptical about the company's future cash flow. While they have negotiated earnestly and in good faith, no unconditional price is acceptable to both sides. Informal meals together, genuine actions to build the relationship and trust, as well as actively listening for each side's real interests have been helpful but insufficient to bridge the fundamental gap between the high valuation of the seller and the sharply lower maximum of the prospective buyer. This gap would also stubbornly resist an array of tactical choices such as starting high, agreeing to locking themselves in a room until an acceptable agreement emerges, and even the seller's feigning the existence of other interested buyers and an urgent deadline for the buyer to commit. At the end of the day, despite flip-chart and brainstorming virtuosity in the context of mutual psychological insight, interpersonal process at the table may fail: the two sides may simply disagree on the likely future of the company and, hence, a mutually acceptable unconditional price.

Of course, there is a promising substantive solution: the two parties could easily bridge the value gap by structuring an agreement in which the buyer pays a fixed amount now, less than the his current valuation of the company, and a contingent amount later based upon the performance of the company over a future period. To the seller, given her optimistic expectations, a high price appears likely under this deal structure. Given his more modest expectations, it is no great concession for the buyer to offer even a large conditional payment; he sees it as relatively unlikely and, if it becomes due, it would be in the happy circumstance, unlikely in his view, that he can easily afford it. Properly structured with adequate incentives and monitoring mechanisms in place, such a contingent payment or "earnout" can simultaneously appear quite valuable to the optimistic seller but not very costly to the less optimistic buyer. In full knowledge that the uncertainty over the company's prospects will ultimately be resolved one way or the other, both sides may now find agreeing on the earnout very attractive relative to walking away in the face of a process-resistant absolute value gap (Lax and Sebenius, 1986; Bazerman and Gillespie, 1999; Lax and Sebenius, 2002).

In essence, this earnout is a "bet", driven by divergent views of the future. As Mark Twain famously said, "it is not best that we should all think alike; it is differences of opinion that make horse races." Conceivably the two negotiators would have stumbled upon this agreement by luck or creativity, though such agreements are frequently missed in practice or, when found, regarded as remarkably insightful, even by very experienced, sophisticated negotiators. (For an extended, detailed example in the Law of the Sea negotiations, see Sebenius (1984).)

Alternatively, the negotiators might have been aware that this structure is merely a straightforward example of a much broader class of potentially value-creating contingent agreements based on differences in probability assessment of future events. Many aspects of such agreements have been investigated including their informal use in economic and non-economic domains (Sebenius, 1980; Raiffa, 1982), their optimal mathematical structure for an arbitrary combination of utility and probability density functions (Sebenius, 1984), their appropriateness when disagreement is based on divergent information as opposed to different "models" or priors of the world (Sebenius and Geanakoplos, 1983), their sustainability (Lax and Sebenius, 1986), their potential truth-revelation qualities (Sebenius, 1984; Lax and Sebenius, 1986; Bazerman and Gillespie, 1999), as well as practical considerations in crafting them (Lax and Sebenius, 1986 2002).

Differences in Many Dimensions as a Major Underlying Source of Joint Gains. This discussion is not intended to unduly privilege contingent contracts driven by different forecasts, as important as this class of agreements can be both analytically and practically. Instead, it highlights and contrasts a substantive line of negotiation research with the predominant process one.

The broader, more interesting 2-D question should be: by analogy to the forecast differences that underpinned the deal in the above example, what accounts for the existence of joint gains from cooperation and how can they be realized? In the analytically trivial cases where the parties want exactly the same issue-outcome or must simply combine forces to achieve necessary scale, simply saying yes can obviously create value.

More interestingly, despite rhetorical appeals to emphasize "common ground" and "overcome differences," consider the following general 2-D proposition: much value creation precisely derives from differences among the participants in a number of distinct dimensions—which can be dovetailed into joint gains by characteristic forms of agreement. If divergent forecasts are present, for example, the above discussion points to precisely formulated contingent contracts to generate joint gains. Beyond contingent deals driven by divergent forecasts, briefly consider several related classes of differences and their corresponding forms of agreement. As represented by the northeast "bulge" in the frontier of Figure 2, all such classes of moves share the characteristic that the net total expected value of agreement can be increased and, thus, that all parties can be made better off at no cost to anyone.

Joint Gains from Trades, Exchanges, Unbundling, and Packaging Driven by Differences in Tradeoffs. Updating Adam Smith, George Homans observed "The more the items at stake can be divided into goods valued more by one party than they cost to the other, and goods valued by the other party than they cost to the first, the greater the chances of a successful outcome." (See the discussion in Zartman, 1976: 10) Essentially, where the parties have different tradeoffs (marginal rates of substitution relative to their endowments) or relative priorities among goods or interests, joint gains from trade are possible. While analytical first cousins, such gains may take the form of simple trades, unbundling of differentially valued attributes (Lax and Sebenius, 1986), logrolling (Froman and Cohen, 1970; Raiffa, 1982), or issue linkage (Tollison and Willett, 1979; Sebenius, 1983). Process-oriented advice may counsel a focus on "interests" or "priorities" as raw material for gain but 2-D analysis identifies exactly what to seek (different marginal rates of substitution) and what forms of agreement can convert such differences into mutual gain (trades, package deals, unbundling, etc.). Raiffa (2002, especially Chapters 11-14) offers an especially accessible discussion of the underlying principles and analysis necessary to convert differences across multiple issues into efficient agreements that embody all potential joint gains.

Joint Gains from Risk-Sharing Mechanisms Driven by Differences in Capacity to Assess, Bear, and Influence Risk. Asked how much she would accept for certain rather than own the rights to a 50-50 gamble at winning $1000 or nothing, a risk-averse individual would accept substantially less than the expected value (say $300). The difference between the $500 "certainty equivalent" and the $300 expected value of an uncertain proposition is the risk premium ($200); it is also a measure of the cost of bearing risk. In general, differences in risk aversion among negotiating parties imply differences in the cost of risk bearing and suggest possible classes of value-creating agreements. Mechanisms that reduce the aggregate cost of risk bearing can generate joint gains for all parties.

For example, a marginally profitable, publicly traded, risk-averse steel company was discussing a joint venture with a highly profitable, privately held scrap metal company. The proposal on the table was to jointly build and operate a modern specialty steel facility that would use scrap metal as an input; the steel company would operate the facility. There was no disagreement about the forecasts of future expenses and profits, hence no contingent deal available driven by probabilistic differences. However, the proposed deal that both parties were considering called for an even split of the investment

costs, operating costs, future funding obligations, and returns. Even though this seemed "fair" to both sides, this proposed deal structure led to an impasse. The publicly traded steel company was highly averse to the risk of any losses that could hurt its earnings, reduce its share price, and increase its cost of capital. Yet the scrap company was far more aggressive in terms of its risk attitude. The two firms were able to reconcile their interests by structuring an agreement in which the scrap company accepted more than a pro rata share of the losses in return for a larger share of the profit. Both parties strongly preferred capping the steel company's downside in return for a higher share of the upside to the scrap company. In short, value was created by allocating more risk to the less risk-averse party and compensating it with a higher prospective return.

More broadly, optimal risk-sharing agreements have been characterized by researchers such as Leland (1978); Sebenius (1980; 1984) generalized this work to analytically disentangle optimal "betting" (contingent agreements based on differences in probability) from optimal risk-sharing mechanisms (based on differences in attitudes toward risk). Lax and Sebenius (2002) extended these concepts, offering a number of examples that generate joint gains by incorporating differences in capacity to assess and influence risk as well as to bear it.

Joint Gains from Intertemporal Re-allocations Driven by Differences in Attitudes toward Time. If Party A and Party B have 10% and 20% discount rates, respectively, and face a stream of future revenues and costs, each will in general assess a different net present (discounted) value for the identical stream. Typically, the higher one's discount rate, the lower the present value for a positive future income stream. Such intertemporal differences offer the potential for mutually beneficial reallocations that (loosely) give more to the most impatient (higher discount rate) earlier, with much more later to the more patient (lower discount rate). For wide classes of utility, probability, and discount functions, Sebenius (1980; 1984) precisely characterized optimal intertemporal allocations (based on different attitudes toward time), disentangling them from optimal betting and risk-sharing—as well as offering numerous non-economic illustrations of these underlying principles for value-creation from differences. (A non-mathematical discussion and illustrations can be found in Lax and Sebenius (1986: 101-105).)

Joint Gains from Other Classes of Differences. Similarly, by way of distinctive forms of agreement, joint gains can be fashioned from differences in cost and revenue structure, productive capacity, tax status, regulatory or accounting regime, constituency, concern with substance versus precedent or relationships, and the like (Lax and Sebenius, 2002).

2-D Analysis Beyond Differences. This canonical set of 2-D propositions concerning the relationship of dimensions of difference to joint gains through characteristic forms of agreement, first stated in general form by Sebenius (1980), has found its way into the negotiation literature in rudimentary and incomplete forms (e.g., in Mnookin, Peppet and Tulumello, 2000; Thompson, 2001). Yet potential joint gains are inherent in many other negotiating structures along with classes of agreements that can realize them. Consider three specific (and very common) negotiating structures—social dilemmas, escalation games, and swaps—before suggesting more general 2-D explorations.

Further Example #1: Characteristic Agreements in Social Dilemmas. Commons problems (Hardin, 1968) such as overgrazing or overfishing share the underlying structural characteristics of 1) widely dispersed costs that, in aggregate, exceed the 2) concentrated benefits. So-called NIMBY ("not-in-my-backyard") problems are structurally analogous: agreement on socially desirable outcomes such as hazardous waste facilities fail to materialize given widely dispersed potential benefits that exceed concentrated costs. Process-oriented approaches such as communication and consultation are often vital to finding negotiated solutions in commons, NIMBY, and related social dilemma problems (Messick and Brewer, 1983; Sally, 1995). Yet, whatever the process choices, sustainable agreements typically share two essential characteristics in such cases: the need to aggregate enough parties who would benefit from the deal in order to generate sufficient (legitimate) compensation to the concentrated parties to act appropriately (Raiffa, 1985).

Further Example #2: Escalation Games and Virtual Strikes. Martin Shubik's (1971) famous "both-pay" auction, in which the high bidder wins a prize at her top bid but the second high bidder also pays his last bid, generates seemingly irrational escalation. This model—whose structure also bears on strikes, price wars, arms races, etc.--has stimulated considerable research into factors contributing to escalation (e.g., Ross and Staw, 1993; Bazerman, 2002). A 2-D perspective, however, might ask what forms of characteristic agreement might prevent losses and, thus, generate joint gains. For example, a so-called "virtual strike" variously proposed and discussed by Howard Raiffa, David Lax, Mike Wheeler, and James Sebenius (Lax and Raiffa, 1982; Lax and Sebenius, 1994; Sebenius and Wheeler, 1994; Lax and Sebenius, 1997; Raiffa, Richardson and Metcalfe, 2002) is an agreement for would-be strikers to keep working and management to keep operations going—while pay and profits go into escrow, to be distributed only on agreement of the parties. Thus, by withholding agreement, either side can inflict the same costs on the other side as would be the case in a normal strike, yet not damage the business and, ultimately, avoid potentially huge collective losses, both to those directly involved and to others who may be adversely affected (for example, to vendors, hotels, host cities, and fans in sports strikes). This innovative device is unlikely to be discovered by process exhortation; yet, it can permit both considerable joint gains for the parties and avoid social costs.

Further Example #3: Swaps. A U.S.-European conservation group wished to preserve the maximum amount of rainforest habitat in South American country. From membership contributions and foundation support, the conservation group had U.S. dollars with which it wished to buy development rights from South American owner after converting dollars to local currency at officially set exchange rate. The owner and conservation group negotiated hard and tentatively agreed on an amount of rainforest to be protected and a price per hectare. The group was persuaded that the agreement would be honored. Before finalizing the transaction, the question arose as to whether 2-D analysis could improve the deal from all sides' viewpoints.

To do so, it was useful to consider a wider set of potential interests and parties that might accommodate a distinctive form of value-creating agreement. The host country was deeply indebted to international creditors in dollar-denominated bonds, which were trading at a 45% discount to their face value. The country had to use scarce

dollar export earnings, needed for many pressing domestic purposes, to keep its debt service obligations current; of course, interest payments were determined by the face value of the debt, not the bond discount. Putting these facts together suggested that value could be created by involving two other sets of players in the negotiation between the landowner and the conservation group.

To realize the potential gains, the conservation group bought country debt from foreign holders at the prevailing 45% discount. It then brought this debt to the country's Central Bank and negotiated its redemption for local currency at premium between discounted value of debt and full dollar face value of debt (up to an 82% premium over the discounted value). Thus the conservation group then used this local currency from the Central Bank to buy more development rights and/or pay a higher price to the landowner.

This expanded four-party negotiation--sequentially involving the group, international bondholders, the Central Bank, and the landowner—left all sides better off than the best result possible in the initial two-party landowner-conservation group negotiation. The Central Bank was able to retire debt and cancel dollar interest obligations, which were very costly to the country, with "cheaper" (to it) local currency without exporting more or diverting scarce export earnings. The conservation group was able to save more rainforest at the same dollar cost while the landowner got a higher price in a currency it was better positioned to use. While the money creation from such a "debt-for-nature" swap might in some cases add to inflation, this example illustrates how 2-D negotiators can increment the value of a deal well beyond what might be possible by thinking of negotiation primarily in interpersonal, tactical terms. (This example also foreshadows the power of 3-D analysis, to be discussed in the next section, since actions to change the game advantageously by adding parties were vital to realize expanded 2-D possibilities.)

While perhaps of intrinsic interest, this example is of broader methodological importance in that it suggests a class of agreements, "debt-for-nature swaps," appropriate to a distinctive underlying structure; for a survey of a decade's worth of experience with such agreements, see Resor (1997). Perhaps less familiar to negotiation scholars, such debt-for-nature swaps are only an example of "debt-for-equity" swaps, which, in turn, are but a subspecies of swaps more generally (see., e.g., Marshall and Kapner, 1993).

Other Promising Areas for 2-D Study and Possible Unification. Beyond these three examples are many further candidates. For instance, "insecure contracts" are potentially value-creating deals—such as digging a mine in a developing country under appropriate terms--in which one party has an inherent, structural incentive to defect from the original terms once the agreement has been signed and the other party has made an irrevocable move. In the face of this structure, parties often do not contract, even where substantial benefits are at stake for all. Classes of agreements and devices to "secure" such contracts in situations of considerable importance have been (unsystematically) explored (Lax and Sebenius, 1981; Raiffa, 1982, especially Chapter 13; Raiffa, Richardson and Metcalfe, 2002: 374-375); beyond contractual flexibility, these approaches involve the equivalent of performance bonds, insurance, and linkages. Yet much remains to be done.

In a second class of examples that remains relatively undeveloped in a negotiation context, financial and "real" options have been extensively analyzed, especially in situations where action and information revelation are sequenced (with respect to financial options, see, e.g., Hull, 2002; with respect to "real" options, see, e.g., Mun, 2002). In related analysis, Sahlman (1987) has explored the character of staged arrangements between entrepreneurs and investors that generate appropriate incentives, share risk efficiently, and respond to updated information. Hall (1999; 2002) has explored this question more broadly in seeking the principles behind optimal design of multi-year option programs and other forms of executive compensation. In a narrower setting involving option design, different kinds of exit and termination agreements, from reciprocal buy-sell provisions (Raiffa, Richardson and Metcalfe, 2002: 185-6) to "Texas shoot-outs" (Brandenburger and Nalebuff, 1996: 52-55) can create value, or, if badly structured, destroy it.

As a final example of broader significance, many economists have worked in areas that they might not in the first instance think of as involving negotiation, and yet that powerfully inform the substantive 2-D dimension of negotiation analysis. Modern scholars of organizational and informational economics extensively analyze optimal contracting schemes (e.g., Hart, 1995). Similarly, the issues surrounding contractual design within and among organizations has been a developing focus around the issues of incentives, monitoring, risk sharing, and optimal action in the context of transactions and agency costs (Williamson, 1975 1996; Gibbons, 2000; Baker, Murphy and Gibbons, 2002).

Whence and Whither 2-D Analysis? The implicit argument thus far with respect to 2-D analysis can be restated as a series of propositions, each of which arguably calls for deeper and more systematic exploration by scholars of negotiation:

- Potential joint gains exist in different classes of negotiating situations (parties, interests, no-agreement options, "rules" of engagement, information distributions, etc.) as a function of the underlying characteristics of these situations;
- Corresponding to such distinct classes of situations are characteristic forms of agreements that can realize potential joint gains for the participants;
- In some, perhaps many cases, powerful underlying principles (such as the role of differences rather than commonalities) can be adduced that serve to unify apparently disparate classes of value-creating agreements; and
- Such classes of value-creating agreements can, in principle at least, be analyzed and described independent of the process of interpersonal interaction in the negotiation.

I have illustrated this set of propositions with the extended example of how a "differences" conception can unify many apparently disparate potential areas of joint gain, some of which are well-understood among researchers, others less so (different interests: trades, unbundling, packaging, logrolling; different forecasts: contingent agreements; differences in attitude toward risk: risk-sharing mechanisms; differences in attitude toward time: intertemporal reallocation mechanisms; etc.). These sources of joint gains and their associated forms of agreement hardly exhaust the possibilities; to illustrate

this contention, I briefly described analogous insight for social dilemmas, escalation games, and swaps. As suggested by the classes of further examples then touched upon, many more areas amenable to this kind of analysis exist and, I suspect, can be conceptually unified in a way that usefully informs negotiation analysis.

Moreover, there are obvious and rich potential intersections of 1-D and 2-D work to be investigated both by a priori and experimental means: what are the 1-D process effects, for example, of the introduction of a new 2-D option? When attributes of the process itself—its perceived inclusiveness, openness, and other elements of procedural justice—are independently valued, how do 1-D interpersonal aspects interact with 2-D considerations of value creation (Thibaut and Walker, 1975; Kim and Mauborgne, 1997)? And, more broadly, under what conditions are various potential classes of agreements descriptively likely? Prescriptively appropriate? Normatively desirable?

These 2-D areas deserve deeper study in their own right by those whose interest is primarily in negotiation and conflict resolution. They strongly complement a more traditional 1-D process focus (core "characteristic #1" from the introductory observations), while generally holding to the assumption of a fixed game ("characteristic #2"). (And while I would argue that those who mainly study interpersonal interaction would benefit from a greater 2-D infusion, those who focus on substance, especially economists, could often benefit from a 1-D infusion of sophisticated process insight, about which they occasionally appear touchingly naïve.) As 2-D research extends and matures, consumers of negotiation analysis will surely find higher value in work that is sensitive both to process and substance, to tactics and dealdesign.

Part III: 3-D in More Depth: The Game Itself: Scope and Sequence

Scientific study of 1-D interpersonal process and 2-D substance in negotiation ordinarily takes place within a well-specified "game" or structure, which is typically held fixed—either axiomatically, by experimental design in the laboratory, or by statistical controls in the field--except for the element(s) under investigation, which can be systematically varied. Indeed, in my characterization of the first two dimensions, the game itself was explicitly treated as given for purposes of analysis. In effect, analysts posit and study a mapping between the structure of the known situation and the negotiated outcome.

Yet who sets up the negotiating "table" in the first place or specifies the "game" within which the process and substance are to be played out? To the (eventual) players, the game itself is often not simply a given, but can arise from conscious efforts to shape it. Indeed, as I will show, the essence of many important negotiating situations can be found in the conscious actions of one or more (potential) protagonists to change elements of the nominal game itself or to set it up in the first place. Such elements include the parties, issues and interests, no-agreement alternatives, "rules of engagement," information and expectational structure, as well as perceptions of the situation. I will refer to the study of efforts to change the process and/or substantive elements of the game, to alter its scope and sequence, to "set or reset the table," as "gamecrafting," or the third dimension ("3-D") of negotiation analysis.

Before investing too heavily in definitions, characterizations, or methodological underpinnings, consider three modestly complex examples that motivate a 3-D focus: an

entrepreneurial startup, a multinational-host country renegotiation of a mining contract and an intra- and inter-organizational negotiation over a policy initiative in a political context. In going through these examples, the reader may be forgiven for initially puzzling over what can be learned from idiosyncratic individual instances relative to controlled studies. In part, the value of a 3-D focus lies in its openness to the complexities and dynamics of some important real negotiations relative to much simpler settings such as car buying or wage determination that often motivate experimental investigations. In discussing each example, I will seek to move beyond the idiosyncrasies and explicitly demonstrate the broader points that 1) important "3-D dynamics" may not be well-captured or studied in 1- or 2-D frameworks, as well as 2) that rigorous and useful analysis of such 3-D phenomena is indeed possible, even without the assumption of a game fixed in advance.

3-D Motivating Example #1: Steve Perlman and WebTV. Consider WebTV founder Steve Perlman's situation after obtaining seed funding, developing the technology to bring the web to ordinary television sets, creating a prototype, and hiring the core technical and management team members (Sebenius and Fortgang, 1999a b). Running desperately low on cash, he faced the something like the "cloud" of potential deal partners depicted in Figure 3.

Figure 3: "Cloud" of Possible Deals That WebTV Might Choose to Pursue

In no meaningful sense could Perlman have been said to face a "fixed" negotiation to be approached tactically "at the table." Instead, the essence of his problem

was how to draw on the elements of this cloud—as he currently or later enumerated--to bring into being the most promising set of ultimately linked and nested deals to build his company. The insights of 2-D analysis could certainly be useful in assessing which subsets of these (or other) potentially involved parties might create the most value, and what deal designs would be most promising. Yet a purely substantive or "outcome-oriented" 2-D focus would just as inadequate as a purely interpersonal 1-D approach. The actual "construction" of Perlman's negotiations highlights an intriguing set of more general, 3-D questions of gamecrafting: which parties to approach, on which terms, in what sequence, by what process, as well as which parties to leave out or defer? While these questions naturally occur in a prescriptive form for an example such as this, the predictive ones are as interesting: what *is* likely to happen in structures of this kind, by what mechanisms, and why?

Dissecting Perlman's actual approach can be informative. With his promising new venture running on "fumes," an obvious negotiation target might have been the venture capital firms, which, unfortunately for the nascent WebTV, were then quite skeptical of consumer electronics investments. Instead of a direct approach, however, Perlman "mapped backward" from his VC target, reasoning that the value of WebTV would be greatly enhanced by first getting a prominent consumer electronics firm on board, then seeking venture funding. Willing to take the risk, he embarked on a sequential strategy. After his optimal choice, Sony, turned him down, Perlman kept reasoning "backwards" from his target. Finally, he was able to get Phillips on board, and then use Phillips to re-open and forge a complementary deal with Sony. Then he negotiated new venture money—at a far higher valuation—since both Sony and Phillips were now on board. With new money, it was fairly straightforward to thread a path of supporting agreements through manufacturers, wholesale and retail distribution channels, content providers, ISPs, and alliance partners abroad—with an ultimate sale to Microsoft of his young but thriving business. I will defer sharpening and generalizing some of the interesting analytical questions raised by this example—"backward mapping," path dependence, sequencing, linkage and separation, coalition-building, —while noticing that this 1- and 2-D-resistant class of negotiations is ubiquitous in the entrepreneurial sector, and arguably, beyond.

3-D Motivating Example #2: Kennecott in Chile. During the 1960s, relationships between multinational companies and developing countries were being sharply revised. In particular, renegotiation of the long-term, low royalty contract governing Kennecott's huge El Teniente copper mine in Chile seemed increasingly likely. (For references to this and similar examples, see, e.g., Smith and Wells, 1975) In this pre-free-market reform era, Chile had what appeared to be a very attractive BATNA—negotiation jargon for Best Alternative to Negotiated Agreement or most attractive no-deal option--in terms of its perceived financial and political interests.[2] By unilateral action, Chile could choose to radically revise the financial terms or simply to expropriate the mine. Kennecott's BATNA appeared poor: to submit to new terms or be expropriated.

[2] A term initially proposed in Fisher and Ury (1981) and later spread widely within the negotiation literature.

Imagine that Kennecott thought primarily about a 1-D process strategy that focused primarily on its interpersonal actions "at the table" dealing with the Chilean government vis-à-vis its mining contract. Management might assess the personalities of the ministers with whom it would be negotiating. It might seek not to come across as an arrogant U.S. multinational and perhaps try to be culturally sensitive. It might choose even choose prestigious locations in which to meet with quiet tables conducive to relationship-building and brainstorming. It might wisely augment its 1-D efforts with a 2-D search for creative solutions within the host-multinational contractual context. And so on. Indeed, Kennecott apparently took such sensible actions.

But this kind of "at the table" approach—reflecting a conception of negotiation primarily as an interpersonal, tactical enterprise or a substantive quest within a fixed setting—would not have been at all promising given the threatening (to the firm) realities of the situation. Arguably, Kennecott was faced with an adversarial, expensive "divorce" in which Chile seemed to hold most of the cards and had powerful political incentives to sharply renegotiate the financial terms or simply expropriate the U.S. firm. After all, experienced Chilean engineers and managers were available; Kennecott couldn't move the giant mine, didn't have a lock on downstream processing or marketing, and had no realistic prospect, as had been true in a prior era, of calling for the U.S. fleet in the event of threatened expropriation.

Consider instead the main elements of Kennecott's entrepreneurial, 3-D strategy to change the scope of the game itself. First, somewhat to the government's surprise, the company offered to sell a majority equity interest in the mine to Chile. Of course, Chile had no interest in that money simply ending up in a New York bank. Thus, second, Kennecott proposed using the proceeds from this sale of equity, along with money the copper firm arranged from an Export-Import Bank loan, to finance a large expansion of the mine. Third, it induced the Chilean government to guarantee this loan and make the guarantee subject to New York State law. Fourth, the company then insured as much as possible of its assets against expropriation under a US political risk agency. Fifth, the expanded mine's output was to be sold under long-term contracts with North American and European customers. Finally, the collection rights to these contracts were sold to a consortium of European, U.S., and Japanese financial institutions.

In short, rather than refine its interpersonal tactics in a fixed country-company negotiation over an existing contract, Kennecott seized the initiative "away from the table" to change the game favorably. These actions fundamentally altered the negotiation in at least three ways.

First, a larger mine with Chile as the majority owner meant a larger and more valuable pie, both economically and politically. The proposal would offer more revenue and address a highly important Chilean symbolic interest in at least nominal sovereignty over its natural resources. Thus, there was the potential of a mutually beneficial partnership between the company and the country in the event of an agreement.

Second, as a result of the company's initiatives, a broad array of customers, governments, and creditors now shared Kennecott's concerns about future changes in Chile and were highly skeptical of Chile's capacity to run the mine efficiently over time. Instead of facing the original bilateral "divorce" negotiation with Kennecott alone, Chile

now effectively faced a multiparty negotiation with parties who would have future dealings with that country, not only in the mining sector, but also across the range of financial, industrial, legal, and public sectors. Hurting Kennecott thus risked damaging a wider set of Chile's present and future interests. Thus, Chile's original BATNA—to unceremoniously eject Kennecott—was now far less attractive than at the outset.

Third, the guarantees, insurance, and other contracts improved Kennecott's BATNA if no deal could be worked out with the host country. If agreement were not reached and Chile acted to expropriate the operation, Kennecott would be able to call in this host of parties on its side. Though the mine was ultimately nationalized some years later, Chile's worsened alternatives to Kennecott's preferred outcome gave the firm a better position and additional years of cash flow relative to those of similar companies like Anaconda that did not take such actions.

It is unlikely that tactical or interpersonal brilliance could have saved Kennecott from a fundamentally adverse situation. Yet a 3-D approach to consciously change the negotiation's scope—the parties involved, the interests they saw at stake, their BATNAs—held real promise once Kennecott focused its energies away from the table. Not only did Kennecott avoid imminent expropriation, but, arguably, it created value—"expanded the pie"—by offering the lure of a potential partner relationship. Moreover, Kennecott claimed much of this added value by improving its BATNA and worsening Chile's.

Having finally specified the perhaps unexpectedly full set of ultimately involved parties and linked issues, it is not as if conventional 1- and 2-D negotiation analysis would be irrelevant in this case. Yet to insist on such prior specification for purposes of analysis would be to squeeze much of what is inherently interesting about this example and others like it. Here, the determined and systematic efforts of one protagonist to set up and alter the very game that was being played—from a domestic bilateral contract negotiation to a global multiparty, multi-issue deal—are of core interest. This example of gamecrafting certainly suggests valuable questions to pursue in greater generality, including a) what elements of a putative game are subject to change and which are most likely to be altered by protagonists? b) what are the effects of such changes on the games in question? c) what classes of actions are likely to effect such changes? and d) under what conditions are the phenomena in a)-c) likely to occur?

3-D Motivating Example #3: The Bureau of Security and Consular Affairs.[3] Phil Heymann, the Acting Administrator of the State Department's Bureau of Security and Consular Affairs (the Visa Bureau) in the Johnson administration, had a proposal that he wanted to become formal U.S. policy. Energized by the ideal of a more open society, he sought to permit non-U.S. citizens to obtain lifetime, though revocable, visas rather than visas of a single year's duration. While this change was technically within Heymann's legal authority, practical and political considerations meant that, at a minimum, he needed a tacit "yes" from Dean Rusk, the Secretary of State, his superior

[3] This episode, a lengthier version of which was analyzed in Lax and Sebenius (1991), is detailed in Heymann (1987) and has benefited from extended discussions with the Phil Heymann, the protagonist. It has independently attracted considerable scholarly attention; see Bower (1983) and Leifer and White (1986).

who could easily rescind Heymann's action (and had potential reasons to do so). The focal negotiation, then, might reasonably be understood as between the Secretary of State and his Visa Bureau Administrator. Traditional 1-D (and 2-D) analysis might be used to explain (or predict the outcome of) this interaction. Yet, as I will show, the logic of Heymann's actions to set up the most promising "game"—rather than how he negotiated within the fully defined situation, once specified—is of considerable (3-D) analytic interest well beyond this episode. I will briefly relate the context and his choices before offering several more general observations.

Heymann's bureau had been at the center of a major liberal v. conservative controversy the previous year that involved allegations of FBI investigations of antiwar U.S. citizens abroad. Though this controversy had finally passed, the bruising public battle had left a strong preference at high levels of the State Department for peace and quiet from Heymann's bureau at a time when the Vietnam war was consuming diplomatic energies.

Under Heymann's proposal, a revocable lifetime visa could in fact be terminated at any point should unfavorable information be uncovered on a foreign citizen; hence there was no substantive security threat posed his initiative. Nonetheless, it could be seen as a symbolic, explosive issue that might again pit conservative guardians of national security against liberal proponents of a more open society. It had the strong potential to reopen old wounds and flare up into the same kind of controversy as had occurred in the previous year around the bureau's alleged complicity in the FBI's requests for surveillance of U.S. citizens abroad. Quite likely, the simple public announcement that this policy had been adopted administratively—a move that was entirely within Heymann's formal authority—would antagonize various national security conscious parties. A blocking countercoalition would almost certainly form and would likely cause a reversal of the policy with severe, if not fatal career, repercussions to the (Acting) Administrator.

There was, however, no real support for the idea of a lifetime visa that Heymann could discern. Only a very few potentially involved parties would be even weakly positive towards this proposal if it were simply presented to them for support. Given the possible political risks, premature request by Heymann to Secretary of State Dean Rusk for support of this visa proposal—although Rusk was vaguely sympathetic with the notion of an open society—would have almost certainly produced a negative response. To the Secretary, the risks of generating bureaucratic opposition and a public flare-up would have been too great for the general benefits of the idea.

Thus, before negotiating the idea with the Secretary of State, Heymann decided that it was necessary build at least a tacit coalition of support for it by adding a series of parties whose assent would signal a less risky, and hence, more desirable, measure. To accomplish the goal, Heymann went through an intensive process of identifying who might be necessary or useful; the resulting list of nine potentially involved parties is scarcely obvious *a priori*. He then paid careful attention to designing a sequence for approaching the various parties and to the nature of his proposed appeal to each one of them. Who should be approached first and on what basis? Then who? Who could or should be ignored or isolated? And so on? Without going into detail about specific

tactics, it is worth tracing the sequence of steps he took, recounting some of his reasoning, and then, extracting analytical lessons.

From the time he became interested in the visa proposal, Heymann waited almost a year until a balance of payments crisis intensified in part as a result of Vietnam and Great Society spending. President Johnson was politically eager for a series of measures that could be publicly presented as at least conceivably improving the payment balance. Johnson asked the Secretary of Commerce to take the lead. When the Secretary urgently requested that members of the administration suggest proposals aimed improving the balance of payments, Heymann responded. A lifetime visa would (arguably) make it easier for foreigners to visit the United States and, hence, increase tourism and boost the balance of payments. Realistically, it would have a very marginal effect. At worst, it would make no difference. But it was a political gift to the Administration as another item on a list the President could present as "doing something" about the payments deficit. In effect, Heymann's visa proposal had been a "solution awaiting a problem." Of course he could only present this as a tentative, personal idea, without formal State Department support.

With the Commerce Secretary's grateful assent, Heymann then returned to the State Department and approached the European Bureau with his "personal suggestion." This Bureau had long chafed under the asymmetry between European countries, which allowed free travel for U.S. citizens without visas, and the United States, which required visas of foreigners. The European Bureau was pleased with the idea, which Heymann again stressed did not yet have any official standing.

It was then desirable to approach Heymann's key subordinate, who had briefly been an FBI agent and was sympathetic to the security concerns that might be raised by this lifetime visa proposal. Nonetheless he would fully understand the lack of any real security threat posed by Heymann's idea. This subordinate had close links to the relevant Congressional subcommittees as well as to the Immigration and Naturalization Service (INS) at the Justice Department with whom the Bureau of Security and Consular Affairs closely worked. This subordinate had felt sufficiently close to Heymann at one point to ask him to propose the subordinate for an ambassadorship, a post not normally given to those who had followed his career path. In a discussion with this subordinate, Heymann shared his conversations with the (enthusiastic) Secretary of Commerce and the European Bureau, taking care to stress that his discussions of the idea to date were only exploratory. He then solicited his subordinate's informed professional view of the merits of this issue as a security matter. Of course, the merits were not in question and after adopting a few modifications suggested by the subordinate, Heymann convened a meeting of the European Bureau and his subordinate to discuss the issue. This was a chance for his subordinate to act "statesmanlike" in front of a group of people who would be his peers should an ambassadorship become available.

By this approach, in particular, sticking to the strict merits of the proposal, Heymann won over his powerful subordinate who controlled the implementation of the process and to whom many relevant legislative staff members as well as key legislators looked for guidance on security dimensions of such issues. With his subordinate on board it was relatively easy to earn the endorsement of the Immigration and Naturalization Service, given their close working relationship.

Yet how should Heymann's coalition building efforts continue? Rather than reasoning “forward" (asking who next?) as he had done thus far, Heymann asked a hypothetical question, reasoning “backward" from the Secretary of State Dean Rusk. Whose agreement would Heymann ideally have in order to maximize the probability that Rusk would acquiesce in Heymann's proposal? Heymann's answer: if Heymann could tell Rusk that the Secretary of Commerce, the Attorney General, the key members of the House and Senate concerned with security and that had oversight of the Visa Bureau, , were all on board, then it would be relatively easier for Rusk to say yes to Heymann's proposal—since this constellation of support would largely have been neutralized the political risks.

But continue this process of reasoning “backwards." If Heymann were to approach the key Senator with his proposal, whose prior approval would maximize the chances of the Senator's acquiescing? Heymann's answer to this question seemed to be the combined support of the most knowledgeable House player, to whom the Senator would likely defer, and the Attorney General, who oversaw the Justice Department (in which the INS and FBI were located).

Continuing this reasoning, who would the Representative want to see on board to maximally increase the chances of approval? To Heymann the answer to this question seemed clear. If both Heymann's key subordinate and the INS director—who represented the operational side of this issue and who the Representative knew to share his security concerns—were on board, some of his concern would be assuaged. Moreover, if the nation's senior law enforcement officer, the Attorney General, were behind the issue, and if the Secretary of Commerce, and, by extension, the President, wanted the proposal, there would be still greater allure. Since Heymann already had his subordinate's support, plus the INS director's and the direct support of the Commerce Secretary, his next target—the Attorney General—became clear.

Fortunately, Heymann had a modest personal relationship with and the respect of the Attorney General. Given that relationship, the Commerce Secretary's support, and the acquiescence of the INS, (the Justice Department's responsible agency) the Attorney General gave his blessing, effectively bypassing the need for FBI Director J. Edgar Hoover's formal involvement. Then the Representative could be approached with the full set of desirable supporters in tow. With agreement from the member of Congress, the Senator's acquiescence would be relatively easy. Then an ultimately successful approach to Secretary of State Rusk was made in the most persuasive manner Heymann could envision. Figure 4 offers a schematic that summarizes Heymann's sequencing choices from the point at which, along with his personal backing, he had the Secretary of Commerce and the European Bureau “on board.”

It is worth noting in this example that the tacit alliance formed by Heymann not only furthered his policy and personal interests but also greatly decreased the perceived political risk of the initiative from Rusk's perspective. Hence, as between the Secretary of State and the acting Administrator, at least, a mutual gain was attained as a result of elaborate coalitional tactics.

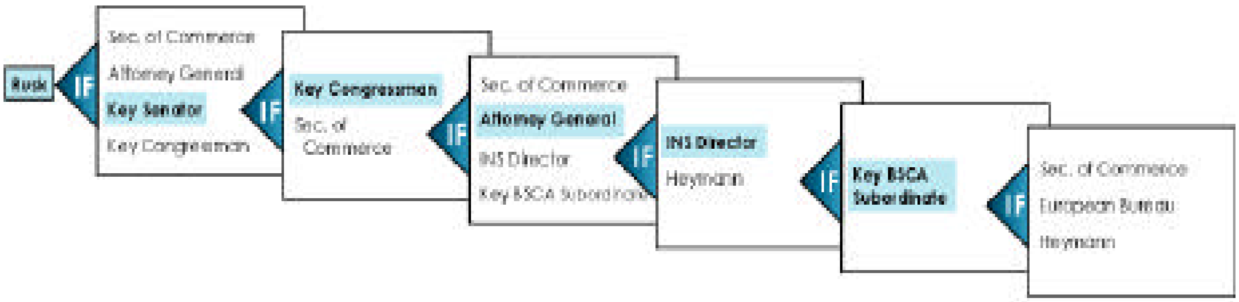

Figure 4: “Backward Mapping” to Construct the Game and Build a Supportive Coalition

Notes to Figure 4: After gaining initial agreement from the Commerce Secretary and the European Bureau, Heymann asked whose prior agreement would maximize the chances of Rusk's agreement. His answer was the Commerce Secretary, the Attorney General, the key Senator, and the key Congressman. Then Heymann asked whose prior assent would maximize the chances that the key Senator would concur. (Answer: the Attorney General and the key Member of Congress.) He continued this "backward mapping" process until he reached the point at which he presently stood: with his own backing, that of the European Bureau, and the Secretary of Commerce.

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This involved example merits at least five observations that bear on the development of the importance and content of 3-D analysis with respect to a far wider class of negotiation problems.

Observation #1: The “Scope” and “Sequence” of the Game as Choice Variables. Clearly drawing an analytic circle around the Rusk-Heymann interaction would miss much of what is interesting about this (and related examples). In addition to interpersonal process considerations, Heymann’s entrepreneurial actions to conceptualize and set up this linked series of dealings suggest a broader logic for constructing a negotiation. From the standpoint of an individual player like Heymann, core questions include: who should (and shouldn’t) be involved, on what basis, and how? Faced with what he, like Perlman, Kennecott or countless other protagonists, assessed as an unpromising game, Heymann methodically set about to change it. Under what circumstances this is likely to happen, as well as the logic of how it is done, are questions worthy of investigation.

Conceptually, of course, one could argue that if the “supergame" of all possible issues and parties were specified at the outset, this 3-D phenomenon would not exist except as a faulty initial definition. This approach, however, would be to define a very real set of dynamics out of analytic bounds. As Kenneth Oye (1979) noted, for example in the context of international relations, many linkages have been forged that were

unanticipated by analysts or practitioners (e.g., the Eisenhower link between the Suez affair and monetary policy, or the Third World link between development assistance and Special Drawing Rights). In the related context of competitive strategy and the kind of thinking that underlies it, Brandenburger and Nalebuff (1996: 235-236) dismiss the "one 'big' game. . .extending across space, over time, down generations" as "too complicated," analytically or practically.

In short, the game itself is an interesting variable. Often it is not at all straightforward to specify this game; how, again, did Heymann decide on and involve that set of players by that process? And the dynamics of its construction under a variety of conditions merits both careful description and analysis.

Observation #2: Path Dependence, Patterns of Deference, and Sequencing. If Heymann had turned to n-person game theory for answers on how to construct this game, however, he would have received little guidance since the predominant emphasis of coalition theories has been on the distributional outcomes predictable from a *given* coalitional structure. In the words of Anatol Rapoport (1970: 286), when reviewing the major focus of N-person game theory,

> If the behavioral scientist thinks about decision-making in conflict systems in the mode suggested by N-Person Game Theory, he will focus on two fundamental questions: 1. Which coalitions are likely to form? 2. How will the members of a coalition apportion their joint payoff?

Along with the WebTV episode, the Heymann example illustrates that, quite apart from the final value of having any party in an ultimate coalition or its share of coalitional burdens or spoils, there are values (and costs) associated with a party's agreement or refusal to say yes along the way. In particular, the prior commitments of other parties may be used as resources in obtaining the acquiescence of other subsequent parties. Thus, conceptually at least, one should disentangle process and outcome value (and cost) in coalitional assessments. Moreover, the existence of sequence-sensitive process value underscores the path-dependence of the result.

Given this path-dependence, the coalition-builder's logic here led to a bootstrapping approach driven by assessments of "patterns of deference," or who defers to whom on the basis of perceived expertise, status and reputation, or obligations of reciprocity and friendship. Such patterns of deference can be formalized into chains of conditional probabilities of, say, Party A's agreement conditional on agreement or disagreement of Parties B and C. (See Sebenius (1996) for an analytic development of this insight, applications, and generalizations.) The appropriate reasoning then involves a form of "backward mapping," an approach closely related to the mathematical technique of dynamic programming (Bellman, 1957; Dreyfus, 1965). Starting with the party whose agreement was ultimately needed—in this case, Secretary of State Dean Rusk—Heymann then worked backward, asking whose prior assent would maximize the probability of agreement from the parties ultimately needed. Then, from that prior group of potential parties, Heymann analyzed who would be most likely to agree and whose assent before approaching this group would be most helpful.

The construction of this "game" of parties and issues—where there was no such "game" before and many potential games imaginable in principle--resulted from Heymann's informal but penetrating analysis of the optimal set of parties to involve in an optimal order (as summarized in Figure 4). The dynamics of this process were very similar to those one encounters in international conference and legislative negotiations as well as in bargaining among countries seeking support for or against various initiatives. Multiple examples of this class of problems—multi-party game "construction" and sequencing to build or break coalitions—together with the analytic formalization and generalization of the sequencing phenomenon can be found in Sebenius (1996), Watkins and Rosegrant (1996), as well as Lax and Sebenius (1991). While sequencing may be of independent interest, its intended value in the context of this example is to demonstrate the potential for useful 3-D analysis even where the game cannot be specified *a priori*.

Observation #3: Informational Aspects of Game Construction. Though I have highlighted the role of sequencing choices operating through patterns of deference in explaining this specific result, Heymann's separation of the individual negotiating encounters opportunistically changed the information structure of the situation and prevented the extent of private opposition from becoming common knowledge. Each successive party finally agreed conditional on learning of others' prior assent (about which Heymann did not misrepresent). Yet consider the following thought experiment: suppose that Heymann had gathered together all the ultimately involved parties, explained his proposal, entertained discussion, and then asked for a vote. A strong majority of the players would have discovered views ranging from skepticism to outright opposition. Common knowledge (in the sense of Aumann (1976)) of this structure of preferences would result: all would know of the others' skepticism and knew that the others knew and knew that the others knew that they knew, etc. Common knowledge of opposition is completely different from the one-way flow of information that Heymann engineered in which each party knew only of its skepticism but others' prior acquiescence. The vote resulting from getting the parties together to discuss the situation would almost certainly have been negative.[4]

This is a broader phenomenon, raising not only analytical but ethical concerns. Benveniste's (1989: 130) account of his efforts to put together a conference of prominent participants underscores the murky line between representation of conditional and unconditional commitments:

> We encountered an initial problem in that no invitees wanted to commit themselves unless they felt the conference would succeed. . . Therefore, we approached five or six well-known potential participants and presenters and explained that we wanted them to allow them to include their names in our plans for the conference but with the clear understanding between us that they could back off later if they did not think the effort worthwhile. *After receiving their tentative promises to attend and converting these promises into apparent hard commitments* [italics added], it suddenly became far easier to obtain the commitment of other participants.

[4] An analytically related phenomenon has been dubbed the "Abilene paradox" (Harvey, 1974) in which private preferences unanimously but inadvertently conflict with unanimously asserted public preferences.

Fortunately, the impact of sequencing decisions on the information elements in a negotiation is more than a backdrop for opportunistic behavior and can lead to very different construction of the "game" for mutual benefit. Consider a situation in which each of two disputing parties will withhold from the other its willingness to agree to a proposal even if the other does so—since even revealing the conditional willingness may open it to exploitation if the other does not reciprocate. A trusted mediator may sequence his or her interactions such that a joint meeting is followed by separate private caucuses prior to a final joint meeting. The private caucuses with the mediator may reveal the conditional willingness of each to acquiesce. A joint meeting in which the mediator simultaneously reveals to the parties their conditional willingness to agree makes this fact common knowledge and can lead to a mutually beneficial deal—whereas each party risking private revelation to the other need not lead to this happier result.

In short, sequential approaches to changing a game may build not only on path dependence and patterns of deference but also on the informational aspects of the situation, preventing opponents' private objections from becoming common knowledge or enabling a deal desired by all but unreachable individually. While such informational insight is of independent analytical interest—and obviously builds on more traditional 1-D research, especially in game theory—I offer it here as part of an analytic account of the conditions under which and the logic behind conscious 3-D moves to set up or reset the table, that is, to change the game.

Observation #4: Generality and Importance of this Class of Negotiating Problems. How important and worthy of study are the minutiae of an example such as Heymann at the Bureau of Security and Consular Affairs? Sociologists Eric Leifer and Harrison White (1986: 130) in an essay from *The Social Fabric*, a volume in the American Sociological Association Presidential Series, consider this same Heymann example and assert that the "wheeling and dealing" it describes is "part of the daily reality in the upper echelons of government, or any other large scale organization." They note further that "bookstores are full of such insider accounts, varied in names and places, but remarkably consistent in the rough contours of wheeler and dealing they depict." In short, this phenomenon is ubiquitous. But if the bulk of 1-D negotiation analysis does relatively little to unravel such phenomena, sociology does not do much better. As Leifer and Harrison (p. 226) observe

> we sociologists. . . do not know what to do with this wheeling and dealing in our theories of large scale organization. . . .[often] we ignore it with our ideal type models of bureaucracy, [or] its business organization successor, the multidivisional [form]. These ideal type models give wheeling and dealing a residual status as "friction" in an otherwise smoothly functioning mechanism. The widely used term, "informal organization," is only a fancy label for this residual status. . . . *We argue that wheeling and dealing is core and not frictional, in the nature of control at the upper echelons of large-scale organization* [emphasis supplied].

In particular, then this example is highly representative of both public and private organizations. Relevant theory can lay claim to a large and significant domain. Indeed, there is a tradition of studying "bureaucratic politics" in public and private settings that underscores the importance of the subject, repeatedly offers examples of sequencing and game construction/change—but stops short of fully teasing out its animating logic. (See,

e.g., Allison, 1971; Pfeffer, 1981; Bower, 1983; Bower and Weinberg, 1988; Pfeffer, 1992).

3-D Analysis: Beyond Motivating Examples

As these three extended examples suggest, a special insight of 3-D negotiation analysis is that, once the bargaining table has been set, a great deal of the game has in effect already been played. Thus, in addition to focusing on the direct interpersonal process (1-D) or substantive outcome aspects (2-D), 3-D negotiators instead think hard about gamecrafting, about the game's scope and sequence, how to set and often re-set the table: Who should (or should not) be there? What is the best means to get them there (or keep them out)? In what order should potential parties be approached? Separately or together? Publicly or privately? Dealing with what set of issues? Separated or combined? In what order? Framed to evoke what set of interests? By what "rules" of engagement? To be established by who and how? Under what set of expectations? Facing what no-deal alternatives? With information common knowledge or privately held? More basically, at what table? Or should there be a series of tables, possibly linked, possibly separated, possibly sequenced, or possibly arranged in parallel? While traditional 1-D (and 2-D) analysis can and certainly has shed considerable light on these kinds of questions, I will show how a 3-D perspective can suggest distinctive classes of insights beyond those highlighted in the motivating examples.

A number of researchers have found that purposive action can influence perceptions of a game's scope and sequence, although the extent to which any potential or given game is malleable remains open to investigation. Walton and McKersie (1965) focused on how negotiators seek to change perceptions of the game by what they called "attitudinal restructuring." Sebenius (1983; 1984) began to investigate a more expansive and tangible version of this phenomenon, dubbing it "negotiation arithmetic," or "adding" and "subtracting" issues and parties. Taking this logic further, the seemingly simple observation explored in Lax and Sebenius (1986, esp. Chapter 9) nevertheless has deep implications for the analysis and practice of negotiation: *The game is simply that which the parties act as if it is.* Rubinstein (1991: 919) takes a compatible view in attempting to increase the real-world relevance of game theory when he argues that a game theoretic-model "should include only those factors which are perceived by the players to be relevant." Brandenburger and Nalebuff (1996: 234-5) compatibly observe that "people draw boundaries and divide the world up into many separate games. It's easy to fall into the trap of analyzing these separate games in isolation. . .The problem is that mental boundaries aren't real boundaries…you can create new links between games or sever existing ones. And by doing so you can change the scope of the game." The dean of social choice theorists in political science, William H. Riker (1993), in coining the term "heresthetic" for political strategy, similarly argued that

> At the most general level, there are the things people talk about as possible subjects for group decision. Call this the feasible set. From this misty swamp, politicians - by constitutional restrictions and direction and by rhetorical and heresthetical maneuvers - form the set of considered issues.

In short, there is no a priori reason why this or that issue or party should be included or why this or that interest should be excluded. If the parties deal with a particular set of issues, alternatives to agreement, and possible agreements, then, those elements in fact make up part of that game.

As such, what might 3-D propositions look like? Discussion of the above examples highlighted analytic generalizations about adding new parties and issues to a nominal game both to create and claim value, sequencing to build and break coalitions, combining and separating issues, shaping the extent to which information is private or common knowledge, etc. Consider two (arguably) representative sets of 3-D propositions—which might more accurately be called "proposition clusters"--starting with the familiar assertion that improving no-agreement alternatives can enhance one's bargaining position.

Sample 3-D Proposition Cluster #1: in order to improve their negotiated outcomes, involved parties often seek to enhance their no-agreement alternatives, or worsen those of the other side(s), by adding new parties and/or issues, or by restructuring the sequence and relationship of ongoing negotiation(s). As the Kennecott example illustrated, one of the most familiar scope-changing moves seeks to improve one side's BATNA—and, perhaps worsen that of the other. This can often be done soliciting outside offers or by bringing new players into a game previously regarded as fixed. At first blush, this observation is a commonplace, valuable yet quite well-known. Yet suppose that a researcher has carefully specified a negotiation, including the no-agreement options, and now plans to investigate an aspect of this fixed game experimentally. What, in practice, often happens when a deal is contemplated with one's counterpart?

Answer: as the Kennecott example suggested, the parties may well go *outside* the nominal game, seeking actually to change it. The familiarity of such 3-D moves should not obscure the behavioral phenomenon nor its analytic implications: negotiators. Faced with an apparently unpromising situation, a player may not cooperate at all with the fixed game assumptions of most analysis and, with resignation, seek to play it as well as possible. Rather, she may deliberately change the game for the better. Indeed, the importance of adding parties to and/or shifting no-deal options in a nominally bilateral process is virtually an article of faith among many negotiators; as a senior AOL executive remarked, "You would never do a deal without talking to anyone else. Never." (Rivlin, 2000) Martin Lipton, virtual dean of the New York takeover bar, compared the effects of changing the game "at the front end" with simply negotiating more effectively in the given game "at the back end:" "The ability to bring somebody in to a situation is far more important than the extra dollar a share at the back end. At the front end, you're probably talking about 50%. At the back end you're talking about one or two percent." (quoted in Subramanian, forthcoming 2003: 1) After leading a string of alliances and acquisition negotiations that vaulted Millennium Pharmaceuticals from a 1993 startup to a multibillion-dollar firm less than a decade later, then-chief business officer Steve Holtzman explained the rationale for adding parties:

> Whenever we feel there's a possibility of a deal with someone, we immediately call six other people. It drives you nuts, trying to juggle them all, but it will change the perception on the other side of the table, number

> one. Number two, it will change your self-perception. If you believe that there are other people who are interested, your bluff is no longer a bluff, it's real. It will come across with a whole other level of conviction. (Watkins, 1999: 12)

Analogous 3-D actions can sometimes transform seeming weakness in two-party negotiations into strength by systematically adding parties and issues to worsen the other side's BATNA. Near the beginning of efforts to obtain agreement from Swiss banks to compensate Holocaust survivors who claimed that these banks had unjustly held their families' assets since World War II, former Seagrams head, Edgar Bronfman, met with a virtual stonewall from top Swiss banking executives in Zurich. Believing that these restitution issues had been settled years ago and that they were on strong legal ground, the bankers were not forthcoming; Bronfman and his colleagues felt arrogantly dismissed. Yet eight months later, entrepreneurial action by Bronfman, the World Jewish Conference, and others, the negotiations had expanded dramatically to the detriment of the Swiss. Now the bankers faced a *de facto* coalition of interests that credibly threatened 1) the lucrative Swiss share of the public finance business in states such as California and New York; 2) the divestiture by huge U.S. pension funds of stock not only in Swiss banks, but in all Swiss-based companies; 3) a major merger between Swiss Bank Corporation and UBS over a "character fitness" license vital to doing business in New York; 4) expensive and intrusive class-action suits brought by some of the most formidable U.S. class action lawyers; and 5) the wider displeasure of the U.S. government, which had become active in brokering a settlement.

Without detailing the steps leading to such a dramatically worsened Swiss BATNA, it should not be surprising that an agreement resulted, including a Swiss commitment to pay $1.25 billion to survivors. (Authers, Hall and Wolffe, 1998; Authers and Wolffe, 2002) This was an almost unimaginable outcome at the outset of the small, initially private negotiations, but easily understandable in the context of the radically reshaped game that came to include a large coalition of parties, with various sources of leverage, pressing the bankers for a deal. Pause for a moment and contemplate a rigorous negotiation analysis of Bronfman versus his counterpart Swiss banker; this sensible specification would simply miss the analytic essence of what happened—unless it explicitly contemplated hard-to-specify game-changing options.

At a far less consequential level, consider a teaching analog to these real examples. In using well-structured negotiation simulations for pedagogical purposes—normally a very powerful approach--both MBAs and seasoned executives frequently twist, turn, and become endlessly inventive in adding issues, interests, parties, rounds, etc., despite stern admonitions from the instructor to take the roles as given. One reading of this persistent behavior is of simple reluctance to follow directions; another is that, in real situations, the given game is often taken merely as a starting point.

A few potent implications flow from these examples of real deals. First, since parties to a negotiation often persistently, creatively, and successfully seek to change an apparently fixed game in this well-understood fashion, one should treat with caution the generality of analytical results that depend on the presumption of a fixed game; actual players can be stubbornly uncooperative with that vital stipulation. Second, systematic investigation of the conditions under which parties do and do not seek to change the

game in this fashion is worthwhile; similarly, analysis of the means by which this occurs remains an open question. Third, just because it may be somewhere between mildly problematic and impossible to confidently pre-specify games and to meaningfully generalize the results, does *not* mean that analysis is futile. Consider a few illustrations of this assertion:

For example, recent results in auction theory (Bulow and Klemperer, 1996) confirm that transforming a two-party negotiation into an active auction with additional bidders vying for a deal can be a potent value-claiming strategy. Under fairly stringent conditions, this analysis suggests that adding another bidder dominates the expected increment from more skillful bargaining without that extra bidder; for extensions and qualifications, however, see Bajari, McMillan and Tadelis (2002). More generally, Lax (1985) used optimal search theory to determine how extensively and by what analytic logic one should invest in a better BATNA (as well as how one's reservation price should be conditioned on statistical search prospects). Leigh Thompson (2001: 138) felt strongly enough about the role of no-deal options to conclude unequivocally that "your BATNA is your most important source of power in negotiation." Perhaps ironically, notice that traditional 1-D investigations—exploring the role of BATNAs--help to explain this 3-D phenomenon (without, however, telling us the conditions under which game-changing moves are likely or the mechanisms by which they occur).

By the way, the implications that improved BATNAs yield better outcomes may be too strong. For example, in a marriage, finding a potential replacement mate during a marital dispute might seriously damage how one's spouse values the marriage. Or, a frustrated subordinate whose boss is known to value loyalty might be better off if he did not generate other offers before going to his boss to improve his job; the breach of loyalty could reduce the boss's sense of obligation to keep his employee happy. In each of these cases, seeking an outside option reveals something about one's "type" that may worsen the distribution of likely outcomes; for a discussion of the key role of "types" in strategic interactions, see, e.g., Myerson (1991) or Rasmussen (1989). And, of course, tactics that can appear threatening—such as developing and invoking linked outside options--may unintentionally provoke mutually destructive escalation. (Deutsch and Krauss, 1960; Pruitt and Rubin, 1986) (Clearly, creating and using outside options merits deeper and more systematic analysis.)

By a similar logic, inadvertently worsening one's BATNA by 3-D moves can be disastrous. Advising a technologically savvy U.S. manufacturing firm on joint venture negotiations in Mexico a few years ago, I discovered that the firm had first actively researched possible cultural barriers, and then methodically ranked its three potential Mexican partners in terms of their relative business desirability. Approaching the negotiations in a culturally sensitive spirit in what had seemed a very logical sequence, they had nevertheless come to an unpleasant impasse with the most attractive partner. Now deep into a later process with the second most desirable candidate, things were again going very badly. Imagine subsequent negotiations with the third, barely acceptable partner if the second set of talks had also foundered—in an industry where all would quickly know the results of earlier negotiations.

As each negotiation failed, the U.S. firm's BATNA—a joint venture with another Mexican firm or not to enter that market at all—was becoming progressively worse with

its successive potential partners. Fortunately for its likely results, the U.S. company reconsidered its approach and opened active exploratory discussions with the third firm in parallel with the second. This both helped the U.S. firm to discover what combination genuinely made most business sense, to avoid prematurely closing options, and to take advantage of the competition between the two Mexican firms for a link with a desirable foreign partner. If the U.S. firm were starting these negotiations again, it should consider arranging the process so that the prospect of a deal with the most desirable partner would function as its BATNA in talks with the second potential partner, and so on. In short, it would create a de facto simultaneous, four-party deal (the U.S. and three Mexican firms) rather than three, two-party sequential games. This far most promising 3-D approach would greatly enhance whatever 1-D cultural insight and tactical ingenuity the U.S. firm could muster.

These apparently varied moves—to add parties who generate competition or exert influence or to resequence potentially linked negotiations—share two characteristics that bear on the sample 3-D proposition I am discussing. First, they go far beyond 1-D tactics "at the table" to change the game favorably. Second, they operate through a common mechanism: each alters perceived or actual BATNAs in ways that can dramatically shift the balance in a negotiation. Visually, recall the basic reference game from Figure 1. In the value-claiming examples just described, an improvement in Party One's no-agreement alternative shifts the vertical axis to the right, leaving the ZOPA generally more favorable to that side; think of Millennium Pharmaceuticals generating more bidders for a potential agreement or the joint-venture-seeking firm in Mexico negotiating in parallel rather than sequentially. If Party Two's no-agreement alternative worsens, the horizontal axis shifts down, worsening its prospects; think of the Swiss bankers after Bronfman's initiatives. Figure 5 illustrates both sets of these changes—improving one's own BATNA and worsening that of the other side; both generally favor Party One, which would normally prefer to bargain in the region CPD rather than OAB. Studies generally bearing out this conclusion are referenced in Lax and Sebenius (1985; 1991). (Recall, however, the above cautions about adversely affecting perceptions of one's type or provoking escalation.)

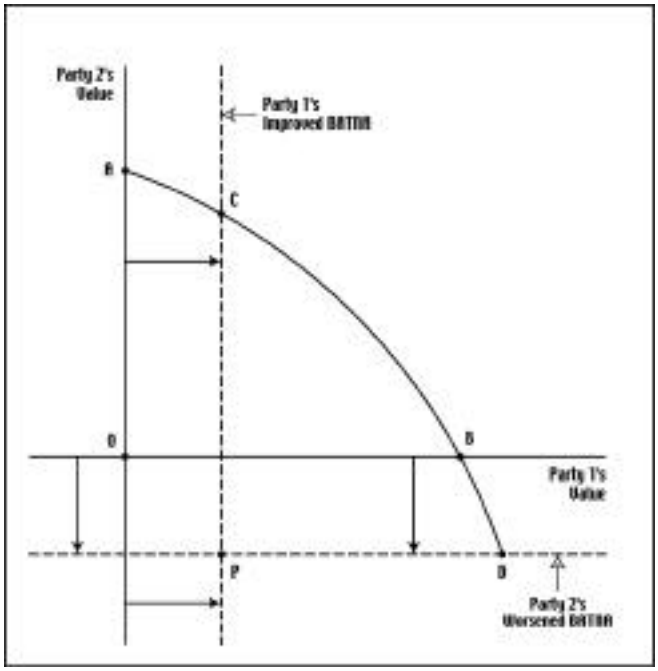

Figure 5: Party One's Moves to Improve Its BATNA and Worsen Party Two's BATNA Shifts the original ZOPA (OAB) to a More Favorable ZOPA (CPD)

More broadly, this discussion of game-changing BATNA moves suggests that valid 3-D propositions in general will often take various forms, singly or in combination. These include 1) that a class of game-changing action indeed occurs, is of importance empirically, and changes the perceived zone of possible agreement in distinct ways; 2) that a certain set of characteristics or conditions make such game changing moves more or less likely; 3) that certain distinctive mechanisms are associated with this class of game-changing moves and, perhaps, that certain conditions make their use more or less likely; and 4) that game-changing moves have characteristic outcome effects. The above discussion contained elements of the first, third, and fourth kinds of 3-D proposition. Clearly much work remains.

Sample 3-D Proposition Cluster #2: in order to improve the prospects for and joint value of potential agreement(s), negotiators often seek to change the game by adding or subtracting issues or parties as well as by making compatible negotiation design choices.

As the discussion of the prior sample proposition illustrated, using issue linkage for leverage or adding parties to build supportive coalitions are time-honored approaches to advancing one's own position. Yet 3-D moves are hardly limited to the competitive sphere of value-claming; they can also be used to expand the pie, or to create value. For instance, two parties may negotiate skillfully and in good faith, but be unable to realize the full value latent in their potential deal. A 3-D move to add parties with complementary interests or capabilities can create value for all sides as can various design choices.

Creating Value by Adding Complementary Parties and/or Issues. Sometimes this is as simple as creating the "right" negotiation rather than excelling tactically in the

"wrong" one. Game-changing moves aimed at generating joint gains of the type illustrated in Figure 2 above may be driven by logrolling on unrelated issues or by more complex party "addition or subtraction" (Froman and Cohen, 1970; Tollison and Willett, 1979; Sebenius, 1983; Hopmann, 1996); the simple graphical analytics and a number of examples of this are detailed in Sebenius (1984: 184-200). Recall, for example, the "debt-for-nature" swap detailed earlier. Conceived as a simple bilateral exchange negotiation between the landowner and conservation group, the potential value creation was sharply limited relative to the reconceived and expanded four party, multi-issue negotiation among international debt holders, the host country's central bank, and the original parties to the proposed deal. Similarly, by involving an implicitly linked set of parties and issues, Heymann reduced the political risk level in his dealings with the Secretary of State; a bilateral dealing held no such possibilities.

In the diplomatic realm, potentially valuable bilateral deals can be impossible unless a third party with complementary differences of interest can be included. Janice Stein (1985: 334) describes Henry Kissinger's architectural role in an important Middle East negotiation:

> . . .the circular structure of payment was essential to promoting agreement among the parties: Egypt improved the image of the United States in the Arab world, especially among the oil-producing states; the United States gave Israel large amounts of military and financial aid; and Israel supplied Egypt with territory. Indeed a bilateral exchange between Egypt and Israel would not have succeeded since each did not want what the other could supply.

In *Co-opetition*, their influential book on business strategy, Adam Brandenburger and Barry Nalebuff (1996) explored the concept of the "value net" or the collection of players whose potential combination and agreement can create value. Actions of 3-D negotiators can often be understood as "weaving" the possible value net by scanning beyond their specific transaction for compatible players with complementary capabilities or valuations and crafting agreements that profitably incorporate these additional players. Figure 6 illustrates the potential joint gains and change in the zone of possible agreement that can result from adding a party of this kind to the "reference" negotiation (of Figure 1).

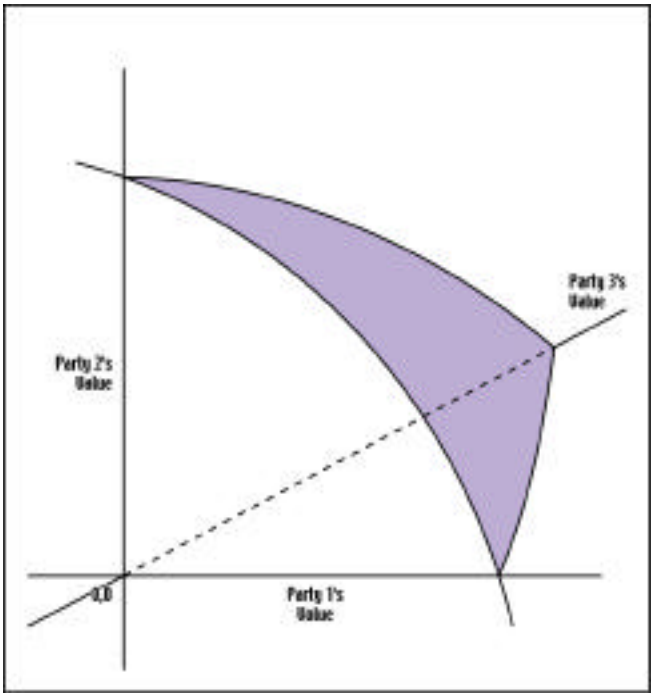

Figure 6: Value-creating change in the zone of possible agreement by "adding" Party 3 to the original bilateral negotiation (of Figure 1).

Enhanced potential for joint gains may link outside parties who value elements of deal more highly than the immediate negotiators. Consider a case of this in which Rhône-Poulenc (RP) negotiated to acquire a controlling interest the Rorer Group. To do so, it planned to create a "Newco" consisting of Rorer and RP's human pharmaceutical business; Rorer's consideration for the deal would significantly consist of Newco shares. While RP argued that Newco would be a hit, Rorer was skeptical of value of the pharma assets to be contributed by RP and, therefore, of the value of Newco shares. To assuage these concerns, RP also contributed one "Contingent Value Right" (CVR) for each share of Newco not owned by RP. These CVRs would last for three years and guarantee the cash difference between Newco stock's price and the target forecast by RP. So far, this was simply a version of RP's "putting its money where its mouth is" via CVRs (that is, the kind of contingent deal driven by forecast differences discussed in the last major section). Yet, because CVRs were designed as securities to trade on the Amex, they effectively expanded a two-party deal to include investors more broadly; in particular this device would select for those investors that were even more optimistic about Newco's prospects than Rorer shareholders, thus adding net value to the original bilateral deal. (These CVRs traded on Amex and were extinguished as an obligation to RP given the satisfactory performance of Newco shares; for a financial analysis of this unusual deal structure, see Kaiser (2002).)

Unlike familiar moves that add parties to generate competition or other forms of leverage, the 3-D actions in these examples serve to create value. Unifying these disparate examples—from doing a debt-for-nature swap, or issuing tradable contingent value rights--is a search for parties and issues that profitably complement those in the

original negotiation. The right questions leading to these kinds of 3-D moves focus on relative valuation. Which uninvolved parties might more highly value elements of the present negotiation? What outside issues might be more highly valued if incorporated into the process?

Creating Value by Reducing Transactions Costs and Separating Out Potential Deal-breakers. In some cases, however, the costs and complications of complexity often suggest shrinking the set of involved issues, interests, and parties in order to create value. Most commonly, this approach reduces process costs and risk of impasse by reducing or staging the number of parties over time. For example, rather than entering into a full multiparty process at the outset, a technical standard-setting negotiation in an industry association may benefit from first seeking agreement between a few dominant players as the basis for a later deal among the wider group. More broadly, the U.N.'s Eighteen Nation Disarmament Committee in the early 1960s proved unwieldy and gave rise to the (relatively) simpler trilateral U.S.-Soviet-U.K. talks responsible for the partial test ban treaty.

Perhaps less obviously, the form chosen for a transaction can dramatically affect the complexity of negotiations; like the debt-for-nature swap or CVR discussion, 2-D and 3-D moves can profitably intersect. For example, when Bell Atlantic and NYNEX planned a "merger of equals" involving ownership changes on each side, they discovered that this structure would have required separate negotiations with regulatory authorities in each of the thirteen states served by the two companies. To avoid these potentially politically–laden negotiations in the seven Bell Atlantic States plus the District of Columbia, a functionally equivalent structure was created in which Bell Atlantic was the nominal acquirer (Wasserstein, 2000: 633-4). Notice again how a 1-D interpersonal, "at the table" orientation would miss such decisive choices.

And, removing or deferring deal-breakers can permit value-creating subsidiary agreements to go forward, perhaps laying the basis for a more comprehensive deal later. For example, insisting on resolving the ultimate status of Jerusalem in a Middle East accord arguably could prevent earlier resolution of a more tractable subset of questions. Similarly, suppose that negotiating control of an ambitious new joint venture seems unresolvable between two parent entities that have little experience working together. Rather than continuing to beaver away at the table, seeking to improve communication and enhance persuasive appeals, the scope of the deal may be profitably shifted. Perhaps the two sides should shift their focus toward crafting a smaller scale, project-oriented venture on which the two sides can gain experience and confidence in each other. This may well detoxify the control issue for larger ventures undertaken later.

Creating Value by Introducing Third Parties and Other Dispute Resolution Mechanisms. Face-to-face negotiations often run up against formidable barriers: communication problems, interpersonal friction, emotional escalation, and ego clash; see Arrow, Wilson, Ross, Tversky, and Mnookin (1995). Being too close to the problem may blind the parties to potential solutions. One or both parties may overoptimistically assess its BATNA (e.g., its chances in court, how well it would fare in a strike, etc.) and stubbornly hold out for more than is possible. Or the right agreement may be evident, but the two sides may have painted themselves into a positional impasse, with no face-saving way to make the necessary concessions to get there. A standard 1-D response to such

barriers is redoubled efforts at more effective negotiation techniques and better interpersonal process. Often, however, changing the game itself can create value by adding a skilled third-party mediator or adopting another alternative dispute resolution mechanism. For example, significant breakthroughs in deep frozen negotiations between Microsoft and the Department of Justice were achieved with the help of multiple intensive mediation efforts by outside parties (Auletta, 2001; Green and Marks, 2001; Heilemann, 2001). Many fundamentally different variants of mediation, arbitration, and other special mechanisms exist, but all are options change the game itself—its parties, communication structure, and incentives—rather than intensified efforts to negotiate more effectively (Folberg and Taylor, 1984; Goldberg, Sander and Rogers, 1999).

Creating Value by Negotiation Design and Negotiation Systems. Within a given negotiation, there is often considerable scope for creative "negotiation design" to enhance the chances and value of agreement. Articulated case examples include Singapore's Tommy Koh and the Law of the Sea (Antrim and Sebenius, 1991), George Mitchell's efforts in Northern Ireland (Curran and Sebenius, 2003 (forthcoming)), and Charlene Barshefsky's choices with respect to negotiating a U.S.-Chinese Intellectual Property Regime (Hulse and Sebenius, 2003 (forthcoming)).

Consider an example illustrating the broader problem of "negotiation design," or how best to (re-)structure ongoing or prospective negotiations. In the late 1980s and early 1990s, various governments sought to decide on how best to structure upcoming negotiations to deal with global warming. For example, would the negotiations best be carried out in separate bilateral encounters, in small groups of like-minded or geographically proximate countries, in large blocs, or on a global basis? Who should be included and excluded? Should a sequential process be constructed? And should the issues be limited to targets for carbon emissions, for example, or should chlorofluorocarbons, and acid rain be linked? Should the negotiations also concern debt, financial transfers, population policy, and the like? Should a comprehensive agreement be sought or should a "framework" be negotiated first with subsequent "protocols" hammered out on specific subjects? To sort out these questions, a variety of negotiation analyses proved useful. For example, for various possible configurations of the negotiations, which blocking coalitions were likely to arise and how might they best be dealt with? How could the negotiations be organized such that there are sufficient potential joint gains to attract the key players? Which rules of procedure should be avoided since they are most likely to keep the most painful conflicts salient and to impede effective joint problem-solving? Analyses of such issues for the climate change talks, the diplomacy of chlorofluorocarbon control, and the Law of the Sea negotiations can be found in Sebenius (1991; 1995a; 1995b).

These questions exemplify the problem of "negotiation design," or how best to configure a specific game in order to improve the chances of a desired outcome. In some cases, this may involve the choice of discrete processes such as optimally matching various alternative dispute resolution mechanisms to different classes of disputes: "matching the forum to the fuss" (Sander and Goldberg, 1994). Closely related is the question of influencing a *stream* of negotiated outcomes to improve the odds of mutually beneficial agreements; examples include the design of organizational dispute resolution systems (Ury, Brett and Goldberg, 1988; Costantino and Merchant, 1996). Finally, the

institutional and regulatory context may be consciously shaped to influence the frequency and quality of negotiations carried out within that setting. For example, Wheeler and his colleagues (Wheeler, 1994; Wheeler, Gilbert and Field, 1997) have evaluated the design characteristics chosen to stimulate productive negotiations in Massachusetts over hazardous waste treatment facilities as well as a New Jersey system designed to foster socially desirable intermunicipal trading of affordable housing obligations.

In short, conscious actions to change the scope and sequence of a negotiation—parties, interests, rules of engagement, etc.--can be used to create value in several distinct ways from complementing the existing players and issues, to reducing transactions costs, removing deal-breakers, invoking dispute resolution mechanisms, as well as broader concepts of negotiation design and systems.

Methodological Challenges, Existing Work, and Future Directions: Descartes, Bacon, and Raiffa.

Progress in understanding 3-D phenomena has and will come from two venerable methodological traditions, inspired by Francis Bacon and René Descartes. It has and will likely be of most prescriptive value in a third, newer approach, exemplified by the "negotiation analytic" approach of Howard Raiffa. To oversimplify, the bulk of modern 1-D analysis of negotiation has been Cartesian in spirit; that is, either implications are deduced from first principles, or a set of ideas, embodied in a theory, is subjected to controlled experiments or statistical investigations. Either way, deduction in the context of a fixed setup offers insight. Thus far, however, while I have drawn considerable insight from 1-D Cartesian studies of bargaining to understand 3-D processes, the spirit of this article has been Baconian in its extensive reliance on field observation and its inductive approach. Freeman Dyson, professor *emeritus* at the Institute for Advanced Study (Princeton) and one of the twentieth century's most distinguished physicists, contrasted these approaches:

"There are two kinds of science, known to historians as Baconian and Cartesian… Bacon said,

> All depends on keeping the eye steadily fixed on the facts of nature, and so receiving their images as they are. For God forbid that we should give out a dream of our own imagination for a pattern of the world.

Descartes said,

> I showed what the laws of nature were, and without basing my arguments on any principle other than the infinite perfections of God I tried to demonstrate all those laws about which we could have any doubt, and to show that they are such that, even if God created many worlds, there could not be any in which they failed to be observed.

Modern science leapt ahead in the seventeenth century as a result of fruitful competition between Baconian and Cartesian viewpoints. The relation between Baconian science and Cartesian science is complementary. We need Baconian scientists to explore the universe and find out what is there to be explained. We need Cartesian scientists to explain and unify what we have found...It is right and healthy

that there should be a clash between their viewpoints, but it is wrong for either side to treat the other with contempt." (Dyson, 2002: 6-7)

Cartesian Insight into 3-D Phenomena. I see one central contribution of the present article as highlighting the prevalence and importance of 3-D, game-changing moves. Once identified, however, conventional 1-D analysis can offer potent insight into 3-D phenomena by way of comparative studies, which typically vary one element of a game and investigate the effects. If these effects appear attractive for one player, presumably actions by that player to change the game accordingly will be more likely. For example, correlating improved BATNAs with better bargaining outcomes clearly helps to explain why negotiators routinely seek to change the game in this way. Studies demonstrating that separate consideration of issues yields Pareto inferior outcomes relative to package negotiations help explain why negotiators will look outside to "add" issues to a focal bargain that offers scant potential for joint gains. And comparisons of the outcome effects of various legislative rules helps explain why a player will seek to change the "rules" of engagement around agendas or other process aspects. (Riker, 1993; Winter, 1997; Black, Newing, McLean, McMillan and Monroe, 1998) Finally, different auction, market, and other mechanism designs can structure and influence the negotiations that take place within them. Investigation of their properties can offer a guide to players on the most desirable mechanism under different circumstances (Bulow and Klemperer, 1996; Roth, 2002; McMillan, 2003). Actions to set up or change the game to take advantage of such insight can be expected.

The advantage of many Cartesian, 1-D studies, then, is their tight analysis of the consequences of altering different attributes of well-specified negotiating situations. Yet while many 3-D insights will come via 1-D methods, supplementary methodological approaches, more inductive and Baconian in spirit, can also offer valuable knowledge.

Supplementary Approach #1: Mapping the Territory. Descriptive, empirical, and inductive fieldwork and case study generation can "map" possibly non-obvious 3-D phenomena, complexities, and dynamics. In the natural sciences, of course, vast amounts of careful, exploratory work provided the basis for unifying breakthroughs. In biology, geology, and astronomy, for example, careful observation and taxonomic studies underpinned later syntheses of evolution, plate tectonics, and cosmology. In the far more modest, human context of negotiation, this kind of exploratory investigation can suggest answers to a number of questions: what is the full set of elements of an actual or potential negotiation that is subject to change? Under what conditions do such changes appear likely? What appear to be the outcome and process effects of these changes? When are such changes desirable to various players? Undesirable?

Many valuable historical, journalistic accounts and participant memoirs of negotiations point up classes of 3-D actions (a sampling would include, e.g., on 19th century diplomacy, Taylor, 1954; on the tactics of Robert Moses, Caro, 1975; on arms control, Talbott, 1984; on Paul Nitze's arms control career, Talbott, 1988; on the CFC control talks, Benedick, 1991; on media negotiations, Bruck, 1994; on 19th and 20th century diplomacy, Kissinger, 1994; on the Northern Ireland process, Mitchell, 1999; on Lyndon Johnson as a legislative negotiator, Caro, 2003, etc.). Yet it can be difficult for those untrained in the analytics of negotiation to produce useful case and field work of this kind. Their descriptions frequently fail to include aspects—parties, internal factions,

interests, BATNAs, competitive and cooperative moves, etc.—known from 1-D work to be potentially decisive. And, despite the risks of theory-laden observation from those schooled in negotiation analysis, informed observers have a good chance to spot new or relatively less well-recognized phenomena.

Among the leading systematic observers and informed documenters of complex negotiations with potent 3-D elements is Michael Watkins; see, especially his book, with Susan Rosegrant, *Breakthrough International Negotiation* (2001), which chronicles and analyzes negotiations concerning the building of the 1991 Gulf War coalition, the Oslo agreements, the 1994 North Korean nuclear agreements, and Richard Holbrooke's actions in Bosnia leading to the Dayton accords. Apart from traditional professional school field case studies of individual negotiations done in some detail (in particular, by John Hammond, James Sebenius, Guhan Subramanian, Michael Wheeler, and Michael Watkins), a few examples of analytically informed, in-depth explorations of actual negotiations would include work on trade negotiations (Winham, 1986; Odell, 2000), environmental negotiations (Sjostedt, 1993; Parson, 2003), the Law of the Sea talks (Sebenius, 1984), public management (Heymann, 1987), national security (Iklé, 1964; Snyder and Diesing, 1977; Allison and Zelikow, 1999), international mediation (Bercovitch and Rubin, 1992), and two-level games (Jacobson, Putnam and Evans, 1993).

Supplementary Approach #2:3-D Taxonomies, Frameworks, and Mid-level Generalizations. When informed by existing scientific knowledge of negotiation, induction from close reading of actual negotiations can yield valuable taxonomies, frameworks, and mid-level generalizations concerning 3-D phenomena. Such knowledge may consistently point to features of negotiating situations that are consequential for analysis and prescription. Some such knowledge may be difficult to cast in fully scientific terms. In other cases, it will be useful for hypothesis generation and as grist for further 1-D investigation. Consider several promising streams of such work investigating 3-D phenomena: on roles and representation, linkage and separation, coalition building and breaking, momentum-building and action-forcing events, issue-framing, and negotiation design.

Role complexity. For example, existing literature tends to divide actors into principal negotiators, agents, and mediators and carry out analyses on the basis of stylized versions of these roles. Yet Watkins' close inspection of numerous cases suggests a subtler role taxonomy depending on outcome stakes, degree of representation, and influence capacity. (See also *Negotiating on Behalf of Others* (Mnookin, Susskind and Foster, 1999) for a more complex portrayal of the agency role than more standard treatments suggest (e.g., Pratt and Zeckhauser, 1985).) Watkins and his colleagues illustrate how players often have some freedom about how their roles will be constructed; each choice carries different tradeoffs—representational, goals, and methods (Watkins and Winters, 1997; Watkins, 2002: 177-182, 192-7).

Linkage. As discussed above in the second representative 3-D proposition, traditional analysis of issue linkage is driven by potential for leverage while more modern treatments stress the potential for logrolling, tradeoffs, and joint gains. Yet, as Sebenius (1983) showed, this is far too simple; a focal game may be dramatically transformed in a number of ways by linkages to or separation from other issues and games. Pushing this line of investigation much further, Watkins *et al.* (Watkins and Passow, 1996; Watkins

and Rosegrant, 2001) developed an analytic taxonomy of linkages including "synergistic" and "antagonistic." And, Brandenburger and Nalebuff (1996: 235-236) describe many ingenious "strategies for linking games that otherwise would not naturally be linked, or for severing links between games that otherwise would naturally be."

Coalition Building and Breaking to Change the Game. Closely related to issue linkage and separation are classes of moves to alter the parties. Coalition dynamics, of course, have been a traditional 1-D focus (For surveys of this literature, see, e.g., Rapoport, 1970; Murnighan, 1978; Lax, David A. and Sebenius, James K., 1991). Yet the reality of coalition building and breaking suggests a far wider set of dynamics than has traditionally been investigated; moreover, coalitional moves are often the means for changing the perceived game. As illustrated in the Perlman and Heymann motivating examples above, and as formalized in Sebenius (1996), path-dependence and sequencing play crucial roles in this process. And, as Watkins and Rosegrant (1996; 2001, esp. in Ch 12) and Watkins (2002: 135-159, esp. in a business context) systematically describe and illustrate, a range of contextual, social, and strategic factors are the tools of effective 3-D coalitional players.

"Momentum and Action-Forcing Events." Studies of the effects on negotiation of deadlines and bargaining costs that vary with time have been important staples of 1-D investigations (see, e.g., Roth, Murnighan and Schoumaker, 1988; Raiffa, Richardson and Metcalfe, 2002, esp. Ch. 9). In common cases, one or more parties will seek to change the game advantageously by imposing (or evading) costs or deadlines. Yet, beyond these garden variety tools, 3-D negotiators sometimes reach to a much richer set of possible momentum-building or action-forcing events including a combination of shuttles and summits, secret diplomacy, sequential orchestration of issues and parties, action on linked games, interim and phased agreements, and the like (Watkins, 1998; Watkins and Lundberg, 1998; Watkins and Rosegrant, 2001; Watkins, 2002). Using little more than procedural ingenuity and obligations of reciprocity, George Mitchell, for example, crafted an effective deadline leading to the Good Friday Accords in Northern Ireland (Curran and Sebenius, 2003 (forthcoming)).

Issue-Framing. A well-established laboratory manipulation has established that objectively identical outcomes framed positively as gains lead to higher joint profit than the same outcomes framed negatively as losses (e.g., Bazerman, Magliozzi and Neale, 1985; Neale and Bazerman, 1985). Yet the concept of framing can be considerably broader; Allison (1971) showed how the "face of the issue" could be powerfully manipulated in the context of bureaucratic politics. For example, advocates of food stamps made relatively little progress when the issue was framed as "welfare for poor people," but got substantial traction, and a powerful supportive agricultural constituency, when the same issue was persistently treated as "farm price supports." After extensive study of diplomatic negotiations, Zartman and Berman (1982)concluded that the typical "concession-convergence" model describing how a fixed game came to (dis-)agreement was inadequate to the reality, which the authors came to conceptualize as a "formula-detail" model. In the first phase, negotiators seek to create, and often battle over, a shared "formula" to describe the essence of the arrangements they are discussing; only in a second "detail" phase, does the process resemble more familiar models with patterns of convergence. (There is often iteration between these two phases.) Watkins and Rosegrant

(2001) and Watkins (2002) have elaborated and extended this "frame game" into an organizational and business context.

Negotiation Design: Shaping the Structure. Beyond these specific dynamics are *overall* 3-D approaches to sets of moves within individual negotiations as well as to design choices to influence streams of negotiations. In the context of competitive strategy, with direct implications for and links to negotiation, Brandenburger and Nalebuff (1996) have elaborated their PARTS model—players, added values, rules, tactics, scope—as the prescriptive face of their claim that "…in the game of business…nothing is fixed….Even a good game can be made into a better one. Real success comes from actively shaping the game you play—from making the game you want, not taking the game you find (p. 10)." Building on his extensive contributions to the social choice foundations of political science to construct "heresthetics," a theoretically grounded basis for political strategy, William H. Riker analyzed a plethora of examples to argue that

> It is true that people win politically because they have induced others to join them in alliances and coalitions. But the winners induce by more than rhetorical attraction. Typically they win because they have set up the situation in such a way that other people will want to join them—or feel forced by circumstances to join them–even without any persuasion at all. And this is what heresthetic is about: structuring the world so you can win. (Riker, 1986: ix; for a review, see McLean, 2002)

In the specific realm of negotiation, I have sought to demonstrate that the 1-D central tendency of analysis and prescription has been about fixed games, and playing the given game well, rather than how best to change it. Lax and Sebenius (1986: 215-241) made changing the game in several dimensions a key piece of their approach to negotiation analysis. Michael Watkins and his colleagues (Watkins and Rosegrant, 2001; Watkins, 2002) have recently taken this prescriptive line of work much further, making the case for "shaping the structure" into a centerpiece of their approach. After demonstrating how to diagnose the potential structure of a situation, he argues for "thinking like an architect about how to fashion the components of a negotiation into favorable configurations," going carefully through the various elements, and observing that "although markets, organizations, laws, and customs establish boundaries for the bargaining range and shape the rules of the game, you almost always have scope to influence the basic structure of your situation and the perceptions of your counterparts (2002: 51-3)."

From positive (Bacon, Descartes) exploration to methodological challenges of prescription (Raiffa). In some cases, the kinds of game-changing moves discussed above may simply convert an initial situation that could be analyzed by standard 1-D means, game-theoretic or behavioral, into another that is equally subject to conventional analysis. As such, 1-D analysis is often a good guide to 3-D prediction and action. In practice, however, the complexity and inherent malleability of examples such as Perlman at WebTV, Kennecott in Chile, the Bureau of Security and Consular Affairs, the Swiss bank negotiations, and many similar cases may inherently render scientific 1-D outcome predictions of game-changing moves problematic. However, as implicitly suggested by the overall approaches described above (e.g., by Brandenburger and Nalebuff, Lax and

Sebenius, Riker, and Watkins), this complexity need not paralyze prescription or action even when the situation is not common knowledge, cannot be fixed or even fully described in advance.

"Negotiation analysis," which Howard Raiffa has characterized as "asymmetrically prescriptive/descriptive" can offer guidance that is methodologically distinct from behavioral and game-theoretic traditions. The underlying concept has been to develop a prescriptive theory of how an actor or third party *should* act conditional on the best available description/prediction of how others *will* in fact act or respond. As with decision theory and decision analysis, the inherent uncertainty is typically treated in a (subjective) Bayesian rather than (objective) relative frequency framework (Raiffa, 1968; Kadane and Larkey, 1982; de Finetti, 1992; Pratt, Raiffa and Schlaifer, 1995). Negotiation analysis is a rapidly developing subfield; see the foundational work (Raiffa, 1982; Raiffa, Richardson and Metcalfe, 2002), evaluations of how it relates to more traditional behavioral studies (Bazerman and Neale, 1991; Neale and Bazerman, 1991), as well as sustained methodological assessment and development relative to a number of other approaches (Sebenius, 1992b a 2001 2002).

For fixed games, negotiation analysis faces no special methodological issues. The analytic challenge arises when a move is contemplated that will change the game itself. Thus far, I have taken the basic reference game (Figure 1) and consistently demonstrated how each class of 3-D moves (adding or subtracting parties or issues, changing BATNAs, discovering joint gains, etc.) changes the perceived zone of possible agreement in characteristic ways (Figures 2, 5, and 6).

Admitting conscious actions to change the perceived game means that the parties need not limit themselves to creating and claiming within the fixed configuration of Figure 1. An improvement in Party One's no-agreement alternative shifts the vertical axis to the right, leaving the bargaining set generally more favorable to that side. If Party Two's no-agreement alternative worsens, the horizontal axis shifts down, worsening its prospects. A successful commitment to a bargaining position cuts off an undesired part of the zone of possible agreement for the party who makes it. A new, mutually beneficial linkage or option (e.g., suggestion of a contingent, rather than an unconditional, contract) causes the frontier to bulge upward and to the right, reducing the parties' "conflict of interest." When issues change or other basic aspects of the game vary, including perceptions, each side's understanding of the basic picture in Figure 1, the zone of possible agreement, will be transformed.

I have typically invoked, by tighter or looser analogy, 1-D insights to suggest outcome effects of these transformations. Yet without an explicit model or formal theory (equilibrium-based or other) adequate to confidently map even more complex changes in the game onto bargaining outcomes, how can an individual negotiator or interested third party decide what, if any, kind of 3-D move to attempt? In the (often implicit) view of many negotiation analysts, the negotiator's subjective distribution of beliefs about the negotiated outcome conditional on the proposed 3-D action must be compared with her subjective distribution of beliefs about the outcome conditional on not taking such steps. The structure-shaping move is attractive if the former distribution gives her higher expected utility than the latter. And indeed, asking the consistently important design question—what negotiating structure is most likely to produce a desired outcome or

stream of outcomes?--a logic very similar to maximum likelihood estimation in statistics can suggest which class of 3-D moves is (subjectively) best.

Such “improvement" in conditional outcome distributions has a subjective basis analogous to the Rothschild-Stiglitz (1970) characterization of a subjectively perceived “increase" in risk. In the skeptical view of Harsanyi (1982), however, this approach might boil down to “the uninformative statement that every player should maximize expected utility in terms of his subjective probabilities without giving him the slightest hint of how to choose these subjective probabilities in a rational manner." Of course, specifying these conditional distributions may call for an internalized and subjective model of the bargaining process since no such general model often exists for prescriptive purposes; where there is a well-developed and applicable game-theoretic or behavioral model, of course, it should be used. And, of course, the “better” the empirical and theoretical basis for the assessment, the “better” the subjective distributions of outcomes. Much negotiation analytic work can be understood as improving the basis for assessing such outcome distributions, drawing on investigation of basic underlying processes of negotiation (such as creating and claiming value) and burgeoning behavioral and experimental economics work on the subject. (For a lengthy, somewhat more technical discussion of this, see Sebenius (2001; 2002). And note that a sharp, though not inherent, limitation of my discussion so far has been a largely “one-way” approach, rather than the harder, more explicitly interactive approach that characterizes formal game theory.)

Conclusions

Are 3-D moves real, distinct, and significant phenomena? Can we meaningfully analyze something we may not be able to fully specify in advance? In affirmatively answering these questions, the argument thus far, supported by a number of case examples and associated analyses, can be summarized in four main propositions:

- The game itself may be malleable and, in important classes of situations, can best be analyzed as *that which the parties act as if it is*, rather than as an objective, fixed construct.
- Given this potential malleability, the parties to a nominal negotiation often purposefully act to change the elements of the negotiation itself--parties, issues and interests, no-agreement alternatives, “rules of engagement,” information and expectational structure, as well as perceptions of the situation--rather than taking the game as given and seeking to play it more effectively.
- Even when the changed game cannot be specified in advance, and even when the menu of options may not be common knowledge, considerable useful analysis is nonetheless possible. Some of this work will be by conventional, Cartesian 1-D approaches; others will employ complementary methods from Baconian exploration and mapping, to the creation of useful taxonomies, frameworks, and mid-level generalizations, and to Raiffa-inspired prescription.
- 3-D propositions resulting from this work have and often will take several forms: demonstrating the existence and importance of the phenomena,

categorizing and explaining the effects of different classes of moves on the nominal game (e.g., creating and/or claiming value via different specified mechanisms), dissecting the workings of key structure-shaping mechanisms and dynamics (e.g., optimal sequencing and path dependence, informational shifts involving private and common knowledge, coalition building and breaking, issue linkage and separation, adding and subtracting parties, the relationship of optimal search principles to BATNA and reservation price determination, issue-framing, etc.), analyzing typical outcome implications of 3-D moves, and elaborating the conditions under which the above propositions become more or less likely.

Considering these points as a whole, the special insight of 3-D negotiation analysis is that, once the bargaining table has been set, a great deal of the game has in effect already been played. Thus, in addition to focusing on the direct interpersonal process (1-D, "at the table") or substantive outcome aspects (2-D, "dealdesign, on the drawing board"), 3-D negotiators instead think hard ("away from the table") about gamecrafting, about scope and sequence, how to set and often re-set the table While traditional 1-D and 2-D analysis can and certainly has shed considerable light on these kinds of questions, a 3-D perspective can suggest distinctive insights.

I have argued that the bulk of research on negotiation focuses on interpersonal process (whether canonically "rational" or more behaviorally faithful) in the context of a well-specified, "fixed" game. The second and third dimensions progressively relax these characteristics, implying a cumulative approach. These further dimensions do not supersede the first; they complement it. Moreover, these are not three alternative "models" of negotiation, but increasingly complete and complementary views of the phenomenon. As I have shown, a great deal of 2-D and 3-D work exists and much more is underway. There are at least four main reasons I see for doing substantially more such work as well as for being explicit methodologically about this 3-D schema.

First, vital second and third dimensional elements of negotiation have received relatively less attention from negotiation researchers than its 1-D elements. Systematically raising their prominence should help redress this imbalance, improving the relevance and depth of negotiation research.

Second, methodological self-consciousness can greatly improve diagnosis and prescription. For example, consider the vexing problem of the "hard bargainer," who either "won't negotiate" at all or is seemingly intransigent. An unconsciously 1-D orientation may diagnose barriers to better outcomes as interpersonal or tactical: poor communication, cultural misreading (is silence a tool for extracting concessions or a sign of respect?), personality-based, a reaction to the other party's moves, partisan perceptions, or the like. If so, 1-D advice may be in order: improved communication, increased cross-cultural understanding, debiasing, mediation to facilitate the interpersonal interaction. Alternatively, a 2-D analysis may suggest that a tough stance is not a function of interpersonal process, but instead is substantive. Perhaps the hard bargainer has solely considered an unconditional price, virtually requiring tough insistence on a favorable deal. If so, the logjam may be broken by 2-D methods: introducing new outcome possibilities such as devising a contingent deal or unbundling differently valued elements of the issue. Or the diagnosis of "hardball" may derive from 3-D factors: the

other side has a very attractive BATNA, with correspondingly little to gain from negotiation, or the deal may be painfully distributive in structure, naturally evoking value-claiming behavior. In this 3-D case, reshaping the game may be the best answer: building a countercoalition to worsen the other side's BATNA, linking issues that will enhance joint possibilities, or the like. This methodological clarity—asking whether the problem is interpersonal process or tactics (1-D), a substantive failure of dealdesign (2-D), or an unpromising game with inadequate scope or counterproductive sequence (3-D)--may avoid attacking three dimensional problems with one dimensional tools.

Third, considerable existing and ongoing work on negotiation, especially in what I have called the third dimension, does not "fit" the mold of traditional 1-D research, yet nonetheless offers valuable and often systematic insight. Rather than making Procrustean efforts to force such work into a 1-D form that it may not naturally possess, especially at an early stage, this 3-D schema may offer a language and framework within which to interpret and benefit from such complementary investigations.

Finally, scholars working in domains whose central focus has not traditionally been on negotiation—in particular those working in fields such as organizational and financial economics, political science, as well as in international relations--have nonetheless generated 2-D and 3-D insights of considerable potential relevance to those whose primary methodological concern involves negotiation. Adopting the proposed schema should significantly increase the chances of mutually beneficial cross-fertilization.

Bibliography

Allison, G. T. (1971). *Essence of Decision: Explaining the Cuban Missile Crisis*. Boston, Little, Brown.

Allison, G. T. and P. Zelikow (1999). *Essence of Decision: Explaining the Cuban Missile Crisis*. Reading, MA, Longman.

Antrim, L. and J. K. Sebenius (1991). Multilateral Conference Mediation: Tommy Koh and the Law of the Sea. *Mediation in International Relations: Multilateral Approaches to Conflict Management*. J. Bercovitch and J. Z. Rubin. London, Macmillan.

Arrow, K., R. Wilson, L. Ross, A. Tversky and R. H. Mnookin (1995). *Barriers to Conflict Resolution*. New York, W.W. Norton.

Auletta, K. (2001). *World War 3.0: Microsoft and Its Enemies*. New York, Random House.

Aumann, R. J. (1976). "Agreeing to Disagree." Annals of Statistics **4**: 1236-39.

Aumann, R. J. (1989). Game Theory. *Game Theory*. J. Eatwell, M. Milgate and P. Newman. New York, Norton**:** 1-53.

Authers, J., W. Hall and R. Wolffe, (1998), "Banks Pay a High Price for Putting the Past Behind Them," Financial Times, September 9, 4,

Authers, J. and R. Wolffe (2002). *The Victim's Fortune: Inside the Epic Battle over the Debts of the Holocaust*. New York, HarperCollins.

Axelrod, R. (1967). "Conflict of Interest: An Axiomatic Approach." Journal of Conflict Resolution **11**: 87-99.

Axelrod, R. (1970). *Conflict of Interest*. Chicago, Markham Publishing Co.
Bajari, P., R. McMillan and S. Tadelis (2002). Auctions versus Negotiations in Procurement: An Empirical Analysis. Stanford Economics Working Papers. Stanford, CA. http://www-econ.stanford.edu/faculty/workp/swp02007.html.
Baker, G., K. Murphy and R. Gibbons (2002). "Relational Contracts and the Theory of the Firm." Quarterly Journal of Economics **117**(1): 39-83.
Bazerman, M. H. (2002). *Judgment in Managerial Decision Making*. New York, John Wiley & Sons.
Bazerman, M. H., J. Curhan, D. Moore and K. L. Valley (2000). "Negotiations." Annual Review of Psychology.
Bazerman, M. H. and J. J. Gillespie (1999). "Betting on the Future: The Virtues of Contingent Contracts." Harvard Business Review **77**(4): 155-160.
Bazerman, M. H., T. Magliozzi and M. A. Neale (1985). "The Acquisition of an Integrative Response in a Competitive Market." Organizational Behavior and Human Decision Processes **34**: 294-313.
Bazerman, M. H. and M. A. Neale (1991). *Negotiating Rationally*. New York, Free Press.
Bell, D. E., H. Raiffa and A. Tversky, Eds. (1988). *Decision Making: Descriptive, Normative, and Prescriptive Interactions*. Cambridge, Cambridge University Press.
Bellman, R. (1957). *Dynamic Programming*. Princeton, Princeton University Press.
Benedick, R. E. (1991). *Ozone Diplomacy*. Cambridge, Harvard University Press.
Benveniste, G. (1989). *Mastering the Politics of Planning*. San Francisco, Jossey-Bass.
Bercovitch, J. and J. Z. Rubin, Eds. (1992). *Mediation in International Relations: Multilateral Approaches to Conflict Management*. London, Macmillan.
Black, D., R. A. Newing, I. McLean, A. McMillan and B. L. Monroe (1998). *The Theory of Committees and Elections*. Boston, Kluwer Academic Publishers.
Bower, J. (1983). *The Two Faces of Management*. Boston, Houghton-Mifflin.
Bower, J. and M. Weinberg (1988). "Statecraft, Strategy, and Corporate Leadership." California Management Review(Winter): 39-56.
Brandenburger, A. M. and B. J. Nalebuff (1996). *Co-opetition*. New York, Currency Doubleday.
Bruck, C. (1994). *Master of the Game*. New York, Simon and Schuster.
Bulow, J. and P. Klemperer (1996). "Auctions versus Negotiations." American Economic Review **86**(1): 180-194.
Camerer, C. F. (1997). "Progress in Behavioral Game Theory." Journal of Economic Perspectives **11**(4): 167-188.
Camerer, C. F. and R. H. Thaler (1995). "Anomolies: Ultimatums, Dictators, and Managers." Journal of Economic Perspectives **9**(2): 209-219.
Caro, R. (1975). *The Power Broker: Robert Moses and the Fall of New York*. New York, Random House.
Caro, R. (2003). *Master of the Senate*. New York, Vantage.
Costantino, C. A. and C. S. Merchant (1996). *Designing Conflict Management Systems*. San Francisco, Josey-Bass.
Curran, D. F. and J. K. Sebenius (2003 (forthcoming)). "The Mediator as Coalition-Builder: George Mitchell in Northern Ireland." Journal of International Negotiation **8**(1).

de Finetti, B. (1992). *Theory of Probability: A Critical Introductory Treatment*. New York, John Wiley.
Deutsch, M. (1973). *The Resolution of Conflict: Constructive and Destructive Processes*. New Haven, Yale University Press.
Deutsch, M. and R. M. Krauss (1960). "The Effect of Threat Upon Interpersonal Bargaining." Abnormal and Social Psychology **61**: 181-189.
Dreyfus, S. E. (1965). *Dynamic Programming and the Calculus of Variations*. New York, Academic Press.
Dyson, F. J. (2002). "In Praise of Amateurs." New York Review of Books **49**(19): 4-8.
Fisher, R. and W. Ury (1981). *Getting to Yes*. Boston, Houghton-Mifflin.
Fisher, R., W. Ury and B. Patton (1991). *Getting to Yes*. New York, Penguin.
Folberg, J. and A. Taylor (1984). *Mediation: A Comprehensive Guide to Resolving Conflicts Without Litigation*. San Francisco, Jossey-Bass.
Froman, L. A. and M. D. Cohen (1970). "Compromise and Logroll: Comparing the Efficiency of Two Bargaining Processes." Behavioral Science **30**: 180-183.
Gibbons, R. (2000). Why Organizations are Such a Mess (and What an Economist Might Do About It). Organizational Economics. http://web.mit.edu/rgibbons/www/.
Goldberg, S. B., F. E. A. Sander and N. Rogers (1999). *Dispute Resolution: Negotiation, Mediation, and Other Processes*. New York, Aspen Publishers.
Green, E. D. and J. B. Marks, (2001), "How We Mediated the Microsoft Case," Boston Globe, November 15, A23,
Hall, B. J. (1999). "The Design of Multi-Year Option Plans." Journal of Applied Corporate Finance(Summer): 97-106.
Hall, B. J., (2002), "Incentive Strategy II: Executive Compensation and Ownership Structure." Case No. 902-134, Boston: Harvard Business School Publishing.
Hardin, G. (1968). "The Tragedy of the Commons." Science **162**(3859): 1243-1248.
Harsanyi, J. C. (1982). "Subjective Probability and the Theory of Games: Comments on Kadane and Larkey's Paper." Management Science **28**(2): 120-124.
Hart, O. (1995). *Firms, Contracts, and Financial Structure*. Oxford, Oxford University Press.
Harvey, J. B. (1974). "The Abilene Paradox: The Management of Agreement." Organizational Dynamics(Summer): 63-79.
Heilemann, J. (2001). *Pride Before the Fall: The Trials of Bill Gates and the End of the Microsoft Era*. New York, HarperCollins.
Heymann, P. (1987). *The Politics of Public Management*. New Haven, Yale University Press.
Hopmann, P. T. (1996). *The Negotiation Process and the Resolution of International Conflicts*. Columbia, S.C., University of South Carolina Press.
Hull, J. C. (2002). *Options, Futures, and Other Derivatives*. Upper Saddle River, N.J., Prentice Hall.
Hulse, R. G. and J. K. Sebenius, (2001a), "Charlene Barshefsky (A), Case No. 801-421." Case No. 801-421, Boston, MA: Harvard Business School Publishing.
Hulse, R. G. and J. K. Sebenius, (2001b), "Charlene Barshefsky (B), Case No. 801-422." Case No. 801-422, Boston, MA: Harvard Business School Publishing.
Hulse, R. G. and J. K. Sebenius (2003 (forthcoming)). "Sequencing, Acoustic Separation, and 3-D Negotiation of Complex Barriers: Charlene Barshefsky and I.P. Rights in

China." Journal of International Negotiation **8**(2).
Iklé, F. C. (1964). *How Nations Negotiate*. New York, Harper and Row.
Jacobson, Harold K., R. D. Putnam and Peter B. Evans, Eds. (1993). *Double-Edged Diplomacy: International Bargaining and Domestic Politics*. Berkeley, University of California Press.
Kadane, J. B. and P. D. Larkey (1982). "Subjective Probability and the Theory of Games." Management Science **28**(2): 113-120.
Kagel, J. and A. E. Roth (1995). *The Handbook of Experimental Economics*. Princeton, Princeton University Press.
Kaiser, K., (2002), Rhone-Poulenc Rorer, http://www.amphia.com/AIFAF_Materials/RPR%20Case%20Slides_v1.pdf
Kim, W. C. and R. Mauborgne (1997). "Fair Process: Managing in the Knowledge Economy." Harvard Business Review: 65-75.
Kissinger, H. A. (1994). *Diplomacy*. New York, Simon and Schuster.
Lax, D. A. (1985). "Optimal Search in Negotiation Analysis." Journal of Conflict Resolution **29**(3): 456-472.
Lax, D. A. and H. Raiffa, (1982), "Touchdown in the Football Impasse: 'Playing Strike' Could Put Game Receipts in Worthy Funds," Los Angeles Times, November 9, 1982, 7,
Lax, D. A. and J. K. Sebenius (1981). "Insecure Contracts and Resource Development." Public Policy **29**(4): 417-436.
Lax, D. A. and J. K. Sebenius (1985). "The Power of Alternatives or the Limits to Negotiation." Negotiation Journal **1**(2): 163-179.
Lax, D. A. and J. K. Sebenius (1986). *The Manager as Negotiator: Bargaining for Cooperation and Competitive Gain*. New York, The Free Press.
Lax, D. A. and J. K. Sebenius (1991). "Negotiating through an Agent." Journal of Conflict Resolution **35**(3): 474-493.
Lax, D. A. and J. K. Sebenius (1991). Thinking Coalitionally: Party Arithmetic, Process Opportunism, and Strategic Sequencing. *Negotiation Analysis*. H. P. Young. Ann Arbor, University of Michigan Press**:** 153-193.
Lax, D. A. and J. K. Sebenius, (1994), "Virtual Strike," The Wall Street Journal, September 9,, 16,
Lax, D. A. and J. K. Sebenius, (1997), "A Better Way to Go on Strike," The Wall Street Journal, February 24, 22,
Lax, D. A. and J. K. Sebenius (2002). "Dealcrafting: The substance of three-dimensional negotiations." Negotiation Journal-on the Process of Dispute Settlement **18**(1): 5-28.
Leifer, E. and H. White (1986). Wheeling and Annealing: Federal and Multidivisional Control. *The Social Fabric*. J. F. Short. Beverly Hills, Sage**:** 223-242.
Leland, H. E. (1978). "Optimal Risk Sharing and the Leasing of Natural Resources, with Application to Oil and Gas Leasing on the OCS." Quarterly Journal of Economics **92**(August): 414-437.
Marshall, J. F. and K. R. Kapner (1993). *Understanding Swaps*. New York, John Wiley & Sons.
McGinn, K. L. and A. T. Keros (forthcoming). "It Takes Two: Social Embeddedness and Improvisations in Negotiation." Administrative Science Quarterly.

McLean, I. (2002). "Review Article: William H. Riker and the Invention of Heresthetic(s)." British Journal of Political Science **32**(3): 535-58.
McMillan, J. (2003). ""Market Design: The Policy Uses of Theory." American Economic Review Papers and Proceedings.
Messick, D. M. and M. Brewer (1983). "Solving Social Dilemmas: A Review." Review of Personality and Social Psychology **4**: 11-44.
Mitchell, G. (1999). *Making Peace*. New York, Alfred A. Knopf.
Mnookin, R. H., S. R. Peppet and A. S. Tulumello (2000). *Beyond Winning: Negotiating to Create Value in Deals and Disputes*. Cambridge, Harvard University Press.
Mnookin, R. H., L. E. Susskind and P. Foster, Eds. (1999). *Negotiating on Behalf of Others*. Thousand Oaks, CA, Sage.
Mun, J. (2002). *Real Options Analysis*. New York, John Wiley & Sons.
Murnighan, J. K. (1978). "Models of Coalition Behavior: Game-Theoretic, Social Psychological, and Political Perspectives." Psychological Bulletin **85**: 1130-1153.
Myerson, R. and M. Satterthwaite (1983). "Efficient Mechanisms for Bilateral Trading." Journal of Economic Theory **29**: 265-81.
Myerson, R. B. (1991). *Game Theory: Analysis of Conflict*. Cambridge, Harvard University Press.
Neale, M. A. and M. H. Bazerman (1985). "The Effects of Framing and Negotiator Overconfidence on Bargainer Behavior." Academy of Management Journal **28**: 34-49.
Neale, M. A. and M. H. Bazerman (1991). *Cognition and Rationality in Negotiation*. New York, The Free Press.
Odell, J. S. (2000). *Negotiating the World Economy*. Ithica, NY, Cornell University Press.
Oye, K. A. (1979). The Domain of Choice: International Constraints and Carter Administration Foreign Policy. *The Eagle Entangled: U.S. Foreign Policy in a Complex World*. K. A. Oye, D. Rothchild and R. J. Lieber. New York, Longman.
Parson, E. A. (2003). *Protecting the Ozone Layer: Science and Strategy*. Oxford, Oxford University Press.
Pfeffer, J. (1981). *Power in Organizations*. Marshfield, MA, Pitman.
Pfeffer, J. (1992). *Managing with Power: Politics and Influence in Organizations* Harvard Business School Press.
Pratt, J., H. Raiffa and R. Schlaifer (1995). *Introduction to Statistical Decision Theory*. Boston, MIT Press.
Pratt, J. and R. Zeckhauser, Eds. (1985). *Principals and Agents: The Structure of Business*. Boston, Harvard Business School Press.
Pruitt, D. G. and J. Z. Rubin (1986). *Social Conflict: Escalation, Stalemate, and Settlement*. New York, McGraw-Hill.
Raiffa, H. (1968). *Decision Analysis*. Reading, MA, Addison-Wesley.
Raiffa, H. (1982). *The Art and Science of Negotiation*. Cambridge, MA, Harvard University Press, Belknap Press.
Raiffa, H. (1985). "Creative Compensation: *Maybe* 'in My Backyard'." Negotiation Journal **1**(3): 197-203.
Raiffa, H., J. Richardson and D. Metcalfe (2002). *Negotiation Analysis: The Science and Art of Collaborative Decision Making*. Cambridge, Belknap Press of Harvard

University Press.
Rapoport, A. (1970). *N-Person Game Theory: Concepts and Applications*. Ann Arbor, MI, University of Michigan Press.
Rasmusen, E. (1989). *Games and Information*. Oxford, Basil Blackwell.
Resor, J. (1997). "Debt-for-nature swaps: a decade of experience and new directions for the future." Unasylva **48**(188): 15-22.
Riker, W. H. (1986). *The Art of Political Manipulation*. New Haven, Yale University Press.
Riker, W. H. (1993). *Agenda Formation*. Ann Arbor, University of Michigan Press.
Rivlin, G., (2000), "AOL's Rough Riders", The Standard, October 20, http://www.thestandard.com/article/display/0.1151.19461.00.htm
Ross, J. and B. M. Staw (1993). "Organizational Escalation and Exit: Lessons from the Shoreham Nuclear Plant." Academy of Management Journal **36**(4): 701-732.
Roth, A. E. (2002). "The Economist as Engineer: Game Theory, Experimental Economics and Computation as Tools of Design Economics." Econometrica **70**(4): 1341-1378.
Roth, A. E., J. K. Murnighan and F. Schoumaker (1988). "The Deadline Effect in Bargaining: Some Experimental Evidence." American Economic Review **78**: 806-823.
Rothschild, M. and J. E. Stiglitz (1970). "Increasing Risk, I: A Definition." Journal of Economic Theory **2**: 225-243.
Rubinstein, A. (1991). "Comments on the Interpretation of Game Theory." Econometrica **59**: 923.
Sahlman, W. A., (1987), "Note on Financial Contracting: "Deals"." Case No. 9-288-014, Boston, MA: Harvard Business School.
Sally, D. (1995). "Conversation and Cooperation in Social Dilemmas: Experimental Evidence from 1958 to 1992." Rationality and Society **7**(1): 58-92.
Sander, F. A. E. and S. Goldberg (1994). "Fitting the Forum to the Fuss." Negotiation Journal **10**(1): 49-67.
Sebenius, J. K. (1980). Anatomy of Agreement. Economics Department and Harvard Business School. Cambridge, MA, Harvard University.
Sebenius, J. K. (1983). "Negotiation Arithmetic: Adding and Subtracting Issues and Parties." International Organization **37**(2): 281-316.
Sebenius, J. K. (1984). *Negotiating the Law of the Sea: Lessons in the Art and Science of Reaching Agreement*. Cambridge, Harvard University Press.
Sebenius, J. K. (1991). "Designing Negotiations toward a New Regime - the Case of Global Warming." International Security **15**(4): 110-148.
Sebenius, J. K. (1992a). "Challenging Conventional Explanations of International Cooperation: Negotiation Analysis and the Case of Epistemic Communities." International Organization **46**(1): 323-365.
Sebenius, J. K. (1992b). "Negotiation Analysis: a Characterization and Review." Management Science **38**(1): 18-38.
Sebenius, J. K. (1995a). Dealing with Blocking Coalitions and Related Barriers to Agreement: Lessons from Negotiations on the Oceans, the Ozone, and the Climate. *Barriers to Conflict Resolution*. K. Arrow, R. H. Mnookin, L. Ross, A. Tversky and R. Wilson. New York, W.W. Norton**:** 150-182.

Sebenius, J. K. (1995b). Overcoming Obstacles to a Successful Climate Convention. *Shaping National Responses to Global Climate Change: A Post-Rio Guide*. H. Lee. Washington, DC, Island Press**:** 41-79.
Sebenius, J. K. (1996). Sequencing to Build Coalitions: With Whom I Should I Talk First? *Wise Decisions*. R. J. Zeckhauser, R. Keeney and J. K. Sebenius. Boston, MA, Harvard Business School Press**:** 324-348.
Sebenius, J. K. (2001). Negotiation: Statistical Aspects. *International Encyclopedia of the Social & Behavioral Sciences*. Oxford, Pergamon Press PLC. **15:** 10483-10490.
Sebenius, J. K. (2002). International Negotiation Analysis. *International Negotiation: Analysis, Approaches, Issues*. V. Kremenyuk. San Francisco, CA, Jossey-Bass**:** 229-252 (pb).
Sebenius, J. K. and R. Fortgang, (1999a), "Steve Perlman and WebTV (A)." Case No. 9-899-270, Boston: Harvard Business School Publishing.
Sebenius, J. K. and R. Fortgang, (1999b), "Steve Perlman and WebTV (B)." Case No. 9-899-271, Boston: Harvard Business School Publishing.
Sebenius, J. K. and J. Geanakoplos (1983). "Don't Bet on It: Contingent Agreements with Asymmetric Information." Journal of the American Statistical Association **78**(382): 424-426.
Sebenius, J. K. and M. Wheeler, (1994), "Sports Strikes: Let the Games Continue," The New York Times, October 30, 9,
Shubik, M. (1971). "The Dollar Auction Game: A Paradox in Non-Cooperative Behavior and Escalation." Journal of Conflict Resolution **15**: 109-111.
Sjostedt, G., Ed. (1993). *International Environmental Negotiations*. Beverly Hills, CA, Sage Publications.
Smith, D. and L. Wells (1975). *Negotiating Third World Mineral Agreements*. Cambridge, Mass., Ballinger.
Snyder, G. H. and P. Diesing (1977). *Conflict Among Nations: Bargaining, Decision Making, and System Structure in International Crises*. Princeton, NJ, Princeton University Press.
Stein, J. G. (1985). "Structures, Strategies, and Tactics of Mediation: Kissinger and Carter in the Middle East,"." Negotiation Journal **1**(4): 331-347.
Stone, D., B. Patton and S. Heen (1999). *Difficult Conversations*. New York, Penguin.
Subramanian, G. (forthcoming 2003). "Auctions and Negotiations as Instruments of Market Efficiency: Resolving the “Revlon Paradox” and Implications for Deal Process." Journal of Corporate Law.
Talbott, S. (1984). *Deadly Gambits*. New York, Vintage Books.
Talbott, S. (1988). *The Master of the Game*. New York, Knopf.
Taylor, A. J. P. (1954). *The Struggle for Mastery in Europe 1848-1918*. Oxford, Oxford University Press.
Thibaut, J. and L. Walker (1975). *Procedural Justice: A Psychological Analysis*. New York, Wiley.
Thompson, L. (1991). "Information Exchange in Negotiation." Journal of Experimental Social Psychology **26**(6): 161-179.
Thompson, L. L. (2001). *The Mind and Heart of the Negotiator*. Upper Saddle River, NJ, Prentice-Hall.
Tollison, R. D. and T. A. Willett (1979). "An Economic Theory of Mutually

Advantageous Issue Linkages in International Negotiations." International Organization **33**: 425-449.
Ury, W. (1991). *Getting Past No*. New York, Bantam.
Ury, W., J. Brett and S. Goldberg (1988). *Getting Disputes Resolved: Defining Systems to Cut the Costs of Conflict*. San Francisco, Jossey-Bass.
Walton, R. and R. McKersie (1965). *A Behavioral Theory of Labor Negotiations*. New York, McGraw-Hill.
Wasserstein, B. (2000). *Big Deal: 2000 and Beyond*. New York, Warner Books.
Watkins, M. (2002). *Breakthrough Business Negotiation*. San Francisco, Jossey-Bass.
Watkins, M. D. (1998). "Building Momentum in Negotiations: Time-related Costs and Action-forcing Events." Negotiation Journal **14.**(3).
Watkins, M. D., (1999), "Strategic Deal-making at Millennium Pharmaceuticals." Case No. 899-242, Boston: Harvard Business School Publishing.
Watkins, M. D. and K. Lundberg (1998). "Getting to the Table in Oslo: Driving Forces and Channel Factors." Negotiation Journal **14**(2).
Watkins, M. D. and S. Passow (1996). "Analyzing Linked Systems of Negotiations." Negotiation Journal **12**(4).
Watkins, M. D. and S. Rosegrant (1996). "Sources of Power in Coalition Building." Negotiation Journal **12**.
Watkins, M. D. and S. Rosegrant (2001). *Breakthrough International Negotiations*. San Francisco, Jossey-Bass.
Watkins, M. D. and K. Winters (1997). "Intervenors with Interests and Power." Negotiation Journal **13**(2).
Wheeler, M. A. (1994). "Negotiating NIMBYs: Learning from the Failure of the Massachusetts Siting Law." Yale Journal on Regulation **11**: 241-291.
Wheeler, M. A., J. Gilbert and P. Field (1997). "Trading the Poor: Intermunicipal Affordable Housing Negotiation in New Jersey." Harvard Journal of Law and Negotiation **2**: 1-33.
Williamson, O. (1975). *Markets and Hierarchies*. New York, Free Press.
Williamson, O. (1996). *The Mechanisms of Governance*. New York, Oxford University Press.
Winham, G. R. (1986). *International Trade and the Tokyo Round Negotiation*. Princeton NJ, Princeton University Press.
Winter, E. (1997). "Negotiations in Multi-Issue Committees." Journal of Public Economics **65**: 323-342.
Zartman, I. W. (1976). *The 50% Solution*. New York, Anchorage-Doubleday.
Zartman, I. W. and M. Berman (1982). *The Practical Negotiator*. New Haven, Yale University Press.