ANALYSING POWER: AN APPROACH BASED ON DRAMA THEORY

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We are at a puzzling moment in history when the Western alliance, headed by the United States, seems to have an enormous preponderance of power in relation to the rest of the world, yet often has difficulty in using it effectively. This raises the question—in what sense can a player be said to have power if it has difficulty using it?

The practical question is - how can the West make its power more effective?

We will try to shed light on this by looking at how power is exercised in game-theoretic and drama-theoretic models, bearing in mind Weber's definition of power:

> In general, we understand by "power" the chance of a man or a number of men to realise their own will in a communal action even against the resistance of others who are participating in the action. (Weber, 1948, p. 180)

To make our discussion relevant, we shall use examples relating to the present-day distribution of power in the world.

The Shapley-Shubik index

The theory of games has had one notable success in defining power. This is with the Shapley-Shubik index of power in voting systems (Shapley and Shubik, 1954).

We shall, however, argue that the Shapley-Shubik index is successful as a measure of power precisely because it discusses systems which are not games. In a game, players' preferences are specified, as well as their abilities to determine the outcome. But the Shapley-Shubik index applies to systems (voting systems) in which only players' abilities to determine the outcome are specified. Their preferences are left unspecified. This is why it succeeds in capturing much of the essence of power in these systems.

The Shapley-Shubik definition of power is, moreover, limited to a very special kind of system - one in which players only vote, and do nothing else. It's true that it is derived from a general definition of "value" applicable to all games in characteristic function form. But as a definition of

power it applies only to voting games. We shall later argue that drama theory - a recent extension of game theory that allows for the possibility that the game itself may change during the course of preplay communications - will allow us to generalise the Shapley-Shubik definition. It will enable us to describe what power means in a general way that takes into account more of the factors that enter into Weber's definition.

What is the Shapley-Shubik definition? Consider first a legislature in which there are three parties, commanding respectively 30%, 30% and 40% of the votes. If a legislative measure requires a simple majority to be passed, then any two parties on their own can pass it - and at least two are required. The party with 40% of the vote thus has no advantage over the other two, and voting power is equally distributed between the three parties. Thus it's distributed in the proportions (1/3, 1/3, 1/3).

But it must be distributed differently in relation to measures, such as constitutional amendments, that require a two-thirds majority. The first two parties together cannot pass such amendments, but the third party allied with any of the other two can. How is power then distributed?

The general answer of Shapley and Shubik, applicable to any voting system, is as follows. Calculate each player's share of power by going through the following steps:

1. List all the subsets of players that are insufficient to pass a measure solely because they lack the player in question, but would be sufficient were the player to be added to them.

2. Calculate, for each such subset, the probability that if the players arrive in a random order, the player in question will arrive just after that subset has arrived.

3. Add together all the above probabilities.

In our example, the subsets of players that are insufficient when lacking player 3, but would be sufficient if 3 were added to them, are {1}, {2} and {1,2}. The probabilities that player 3 will arrive just after each of these sets are 1/6, 1/6 and 1/3[1]. Adding these together, we find that 3 has a 2/3 share of the power. Each of the other two players therefore has a 1/6 share (since they must share the remaining power equally between them). The power distribution is therefore (1/6, 1/6,

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[1] For example, in the case of player 3 joining a coalition of players 1 and 2, players could "join" in the order 1, 2, 3 or 2, 1, 3. These are the only two appropriate sequences from the 6 possible sequences, leading to a probability of 1/3 that player 3 will join directly after the formation of a coalition composed of players 1 and 2.

2/3).

The general formula for calculating a player's share of power in a voting system is, according to Shapley and Shubik.

$$\sum_{S} \frac{|S|!(n-|S|-1)!}{n!}$$

where the sum is taken over all sets S that are insufficient just because they lack the particular player we are concerned with, and n is the total number of players.

Now what makes this a satisfactory index of voting power is the fact that it relates to measures for which the players have, at present, no preferences. They may lack preferences because the measures to be voted for lie in the future – i.e., the players don't yet know what they are. Equally, they may lack preferences because they have not yet made up their minds over a certain issue, but are open to being swayed in either direction, for or against. Because all preferences are undecided, the random way in which the formula imagines coalitions being formed to pass a measure is appropriate. The particular randomisation that Shapley and Shubik propose is proved by them to have particularly desirable qualities – i.e., it's the only solution to the problem of defining a power distribution that (a) does not discriminate between players except on the basis of their voting power and (b) is such that if the players are involved in two separate voting systems, the total power of a player in the combined system is the sum of its powers in the two separate systems.

Thus the index is a good measure of the a priori voting power that a given constitution assigns to the members of a legislature, since in this case we do want an index that abstracts from players' preferences for particular measures and treats all players in a symmetric, non-discriminatory way.

If, on this basis, we work out the distribution of voting power in the UN Security Council - the same today as in 1954, when Shapley and Shubik wrote their paper - we find that the five permanent members of the Council, who exercise a veto, have about 98.7% of the voting power, leaving about 1.3% to be shared between the other six members, who are needed only to make up the necessary majority of seven.

The index might be used today to work out how much voting power the United States, or the Western alliance as a whole, would have under various proposed constitutions for international bodies such as human rights courts.

While it thus captures some of the essential aspects of what we mean by power, the Shapley-

Shubik index has drawbacks. If a certain subset of players tend to vote together, those outside the subset have a better chance of wielding the decisive vote, and thus have more power.

The fact that the three Western members of the five-member permanent Security Council tend to vote together, normally in accordance with the US position, means that Russia and China tend to wield more than their formal share of power. A typical measure coming before the Security Council is one in which the West desires to make an intervention, China is willing to go along, and Russia is doubtful. In such cases Russia wields more than its share of power, since it tends to hold the swing vote.

Thus a preference for voting with certain other players deprives a player of power. So also does a preference for or against the measure to be voted for. Power lies in the ability freely to determine the outcome. However, freedom to determine outcomes is taken away if already established preferences or voting coalitions have determined the way in which such freedom will be exercised.

To see this, imagine two players who must both agree to a certain measure in order for it to be carried out. If one of them is indifferent as to whether it is carried out, while the other has fixed preferences in favour of it, then the indifferent one has power over the other. It must be persuaded, given reasons or offered favours in exchange for its vote. Note that while some kinds of favours may be illegal, others, such as flattery, subservience or alterations in the proposal that make it more attractive, are not.

But in discussing these obvious, common-sense signs of an imbalance of power, we are departing further and further from a game-theoretic model. Game theory assumes that the game, including both the set of possible outcomes and the players' preferences over this set, is fixed. But A's power over B is shown when B has to persuade A to vote for a certain measure. B persuades A either by giving reasons for A to have a certain preference (thereby changing A's preferences) or by offering favours to A (thereby changing the set of possible outcomes considered by the players).

A's power is also shown when - as in the case of an individual or body with decision-making power - it is free to consider which of a set of possible outcomes it prefers, knowing that it can determine the outcome within that set more or less regardless of B's preferences, even though implementation depends on B. Again, this can only be modelled by supposing that A can change the game by deciding or re-deciding its own preferences.

To consider such changes in the game itself we have to move away from game theory toward

drama theory.

From game theory to drama theory

Drama theory, as an extension of game theory, is concerned with a period of preplay negotiations preceding the game proper. During these negotiations the game is defined and re-defined, starting from an initial definition. If the negotiations are successful, the game is finally defined in such a way as to permit a perfectly stable resolution which is agreed to by all parties. Thus these successive redefinitions of the game constitute a conflict resolution process.

When their problem is successfully resolved in this way, the players are committed to that resolution, and the re-defined game is such that their commitments are self-stabilising. Nevertheless, it is possible that in redefining the game they have been deceiving each other, so it is conceivable that they may fail to carry out their commitments.

It is also possible that negotiations may not succeed, but may break down. In this case, players are committed to carrying out the threats they have made, implicitly or explicitly, as to what they would do if they did not get their way (or achieve their desired "position", to use drama theory terminology) in negotiations. Again, though they have committed themselves to carrying out these threats, they may have been bluffing and may fail to actually carry them out.

Drama theory focuses on the "positions" adopted by players at various stages of the conflict resolution process, and the "fallback positions" that they threaten to implement if others do not accede to their positions.

> In the negotiations to bring the "Lockerbie bombers" to trial, the UK/US position is (currently) that the trial can be held in Holland, but must be conducted under Scottish law. One of the fallback positions available to the UK/US (in the event of a breakdown in negotiations) is continued sanctions against Libya.

As in traditional game theory, players have preferences for the various outcomes of the game they face at a particular stage – including outcomes that represent the positions of other players or the threatened future (our term for the outcome that would result from players carrying out their fallback positions). In general, the initial positions of the various players will be incompatible – ie, a resolution that allows all players to meet their initial objectives will initially be impossible. Even when they do agree on a position, they may not be able to trust each other to carry it out

The tensions created by incompatible and mistrusted positions are captured formally by drama

theory in the notion of "dilemmas". Drama theory admits the existence of six dilemmas which, it can be shown mathematically, must be resolved if a negotiation is to be concluded (and the agreements implemented) successfully. The six dilemmas are: Deterrence; Inducement; Positioning; Threat; Co-operation; Trust.

Player A has a deterrence dilemma when B prefers the breakdown of negotiations over the position advocated by A. A's threats are therefore insufficient to deter B from following its own agenda.

> A typical UN response to terrorist violence is to impose sanctions on the countries associated with the terrorism. In many cases, the threat of sanctions is insufficient to curb acts driven by fervent religious or nationalistic beliefs. The UN, therefore, often faces a deterrence dilemma when adopting its "standard" response to terrorist activities.

An inducement dilemma arises when A prefers B's position to the breakdown of negotiations. As a result, A has an incentive to accept B's wishes if B threatens to withdraw from discussions. It is difficult for A to maintain its position in the face of this inducement.

> It could be argued that Microsoft's business partners have an inducement dilemma in the current "antitrust" debate. It has been claimed that computer manufacturers wishing to bundle Microsoft's Windows operating system with their equipment have been contractually "prevented" from bundling any products developed by Microsoft's competitors. If this is true, the computer manufacturers would, presumably, prefer to have a free hand over what software they can include with their own products. However, faced with a choice of bundling any product *apart* from the ubiquitous operating system (the threatened future) or an exclusive deal with Microsoft (Microsoft's alleged position), most sane manufacturers would prefer the latter.

Appendix A defines all six of the drama-theoretic dilemmas, along with examples and suggested strategies for overcoming the dilemmas.

These dilemmas are the driving force in negotiations. Tensions resulting from unresolved dilemmas lead players to find new ways of tackling the situation – or to redefine the game. For example, a player may devise a more unpleasant threat, or a new player may be brought into the game.

> Companies facing a takeover bid have been known to recruit (via financial incentives) other prospective purchasers in an attempt to start a bidding war. In such cases, a company is seeking to prevent a low price takeover by changing the game to include a third party. The

resulting fallback position (new bidder acquires the company) creates an inducement dilemma for the original bidder forcing it, in turn, to change the game.

As the previous examples demonstrate, drama-theoretic dilemmas are closely associated with the use (and abuse) of power. We will now consider this association in more detail.

Exercising power means "winning" a drama-theoretic confrontation

Based upon this description of how players behave during preplay communications, it seems that we can make a number of useful observations about the exercise of power. We will try to use these to throw some light on the factors affecting the power of the Western alliance.

First, it seems that a character's power in a drama relates to its ability to determine which solution, if any, is arrived at during the period of pre-play communications – i.e., it consists of "winning" a drama-theoretic confrontation.

Why do we argue this? We've seen that there are two kinds of possible endings to a dramatic episode - one where there's an agreed solution and one in which there's no agreement, and parties are expected to resort to their fallback positions. Although neither an agreed solution nor parties' fallback positions may in fact be carried out as it was promised or threatened that they would be, there is nevertheless a general distinction between episodes that end in agreement and those that don't. Now in the latter case, when parties resort to their fallback positions, we would not say that any party has successfully exercised power over the others, since no party has succeeded in getting what it demanded – i.e., in getting its position.

> In the Northern Ireland peace process, Britain, the Irish Republic and the United States, as well as the internal parties, are exercising various degrees and types of power to affect the outcome. If, however, the peace process breaks down, perhaps as a result of two parties trying too hard to push their power against each other, then no one will have succeeded in determining the outcome, since it will not be an outcome any party was trying to achieve.

An apparent exception to this occurs when one of the parties' positions is identical to or compatible with the threatened future – i.e., when its position is that the negotiations *ought* to break down, because it is against negotiations. If that party's behaviour causes negotiations to break down, it will seem to have successfully used its power to affect the outcome.

> This is the case with the groups in Northern Ireland that have broken from the IRA because they are opposed to the peace process. As the parties involved in negotiations frequently point out, if negotiations fail, these groups will have succeeded — and they see it as wrong to let

such small, unrepresentative groups exercise power over the outcome.

In such a case, however, the players whose position is that negotiations should not take place are, in fact, negotiating with a subset of players whom they wish to persuade to withdraw from the negotiations. There is therefore a separate, linked drama going on within this subset of players, a drama in which some take the position that negotiations in the overall drama should continue, while others hold that they should not. Within this sub-drama, it remains true that neither side succeeds in exercising its power if negotiations (meaning those taking place within the sub-drama) break down.

> In Northern Ireland, the splinter groups within the IRA that oppose the cease-fire are in confrontation with the leadership of the IRA, which supports it. Table 1[2] is a simple model of this confrontation. The leadership takes the position that the splinter groups should join the cease-fire, while the splinter groups hold that the leadership should discontinue it. The threatened future — the same as the current situation — is that the IRA continue with the cease fire and participation in the peace process while the splinter groups stay out. At present, each prefers the threatened future to the other's position. Thus neither player faces an inducement dilemma, and both face a deterrence dilemma. Each is, however, trying to overcome its deterrence dilemma by doing what it can to influence the situation so as to make the other prefer its position to the threatened future. It does this by trying to persuade Republican supporters to back its own position and by other means. The point is, however, that continuation of the threatened future represents failure within this confrontation for both sides.

Thus our general point holds. Breakdown of negotiations means that all parties have failed to exercise power.

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[2] Any readers unfamiliar with the card table metaphor can consult Appendix B for a description of how the card table is interpreted. An intimate familiarity with the representation is unnecessary for the purposes of this paper.

I is IRA position
S is splinter groups' position
 t is threatened future

	I	S	t
IRA			
cease fire, join	■	□	■
SPLINTER GROUPS			
cease fire, join	■	□	□

**Table 1: Confrontation between IRA and
splinter groups opposed to cease-fire**

Again, when negotiations break down, there may ensue a period of negotiations between subsets of players over the question of whether and how to implement the threats they have made. But this is another kind of sub-drama. The subject of these negotiations – viz, whether to implement the threats that have been made – and the players involved (subsets of the original set of players) are again different to those in the original game, the one in which preplay negotiations have broken down.

When negotiations over the Vance-Owen peace plan for Bosnia broke down in 1993, the Bosnian Serb Parliament having refused to ratify their leaders' agreement to the plan, the Western alliance had to decide whether to carry out Cyrus Vance's threat to use the US Air Force to "turn Bosnia and Serbia into a wasteland." Negotiations took place between the US and its European allies, as a result of which it was decided to take no action. However, these negotiations were over the question of whether or not to bomb the Serbs. Power was being exercised between the Western nations over that issue. The West had failed to successfully exercise power over the original issue, viz, the acceptance of Vance-Owen.

Power, in other words, is exercised in relation to acceptance of an agreement. This acceptance is gained or withheld during preplay communications, prior to the actual implementation of an outcome, not during implementation itself. It is different in this respect from force, which is a

matter of determining the outcome in the course of its actual implementation.

> Take the case of two wrestlers. They use force to throw each other to the ground, etc. In this way, they try to determine the outcome in the course of its implementation. By contrast, if one wrestler bribes the other to deliberately lose the match, he is using power - the power of money - to determine the outcome by getting his desired outcome accepted during preplay discussions.

> Similarly, the West used force to drive Iraq out of Kuwait, having failed in its attempt to use power to the same end – i.e., having failed to negotiate Iraqi withdrawal.

Of course, it is often the case that a player is able to exercise power in preplay discussions precisely because it can credibly threaten to use force if it does not get its way in these discussions. In this way, power can depend upon the credible ability to use force. Nevertheless it is not the same thing as force. In fact, if force has to be used to obtain an objective then the attempt to use power has failed.

Thus the successful use of power is a matter of obtaining other players' prior acceptance of a certain way - one's own chosen way - of resolving a problem. It is a matter of getting acceptance of one's position in a confrontation.

Decision-making power is a special case of this. The power of a legislature or an executive body is said to lie in its authority to make certain kinds of decision. But this authority is just an institutionalised way of resolving certain types of conflict through a particular kind of formalised communication process. The threatened future, to be implemented if the resolution (the decision) is not accepted, is also institutionalised, using legal or other sanctions. Members of an organisation who fail to carry out decisions made by a properly constituted body are subject to dismissal or worse penalties — as in the case of soldiers executed for disobeying orders.

In the international arena, however, such institutionalised ways of resolving conflict are weak or non-existent. We therefore need to look at how players establish the credibility of their threats and promises in the absence of automatic credibility-enhancing mechanisms, such as established systems of law and authority.

Moving to an agreed position

In sum, seeing how power is successfully exercised is a matter of looking at how players get their way in a drama-theoretic confrontation. The drama-theoretic framework, since it allows preferences and possible courses of action to be defined and re-defined by the players

themselves, does allow us to examine such power-related phenomena as a player being free to make up its own mind about what it prefers, or less powerful players thinking up new ways of pleasing more powerful ones.

"Winning" a drama-theoretic confrontation is not, however, a well-defined concept. It is not like winning a game, which is a matter of achieving fixed, given objectives within a fixed, given framework of opportunities. In a drama, both a player's objectives and the opportunities it faces may change as they are reassessed and redefined. Hence, it is possible for everyone to win, since it is possible for preferences to change and new courses of action to be invented such that everyone can be satisfied.

So what does power mean in a confrontation? If the process of dramatic resolution is to move to a successful conclusion — as it must if power is to be successfully exercised — it must first of all bring players to acceptance of a common position. That does not solve the whole problem. The remaining problem is for them to trust each other to carry out that common position.

> In successive confrontations with Iraq following the Gulf War, the Iraqis have been pressured into agreeing with Western conditions concerning inspections and disarmament. Even after they have agreed, however, the West has not been able to trust them to carry out these agreements. On the other side, Iraq has claimed to mistrust the West's intention to relax the sanctions imposed on them, even if they do carry out the agreed conditions.

The first problem, however is to arrive at a common position, and so the first question is how a player exercises power in the process of defining a common position.

Now in drama theory (limiting ourselves to the two-person case), a common position is arrived at when at least one player has an inducement dilemma (i.e., it prefers the other's position to the threatened future) which it solves either by accepting (moving to) the other's position or by suggesting a third position which is acceptable to the other player while being better for the first player than the other's position.

> In the agreement that ended the last (1998) confrontation with Iraq, Iraq broadly accepted the position of the US-led coalition by abandoning restrictions on inspections. When the agreement was looked at in more detail, however, it appeared to contain concessions (i.e., a firm commitment to end sanctions in return for compliance with inspections) which made it a third position, acceptable to the US but better for Iraq than the original US position.

Often, therefore, as happened in this case, a player will not get exactly its position, but will have to agree to something more acceptable to the other side, given that the alternative is a breakdown

in negotiations. But it will be considered to have more power, the less it has to compromise in this way.

We can model this if we return to the viewpoint of Shapley and Shubik, and consider a set of possible outcomes, from which the player has not yet chosen a most-preferred one, since the issues to be decided or the form in which they will arise lie in the future. Consider such a set S of possibilities. It seems that player A will have the power of being able freely to choose any outcome from S if:

1. A has only a small preference for any s in S as compared to the threatened future t. Thus A will have only a small inducement dilemma in rejecting any position in S and going for the threatened future t instead. The result should be that if A takes a position s^* in S, and B suggests an alternative position s instead, A can credibly say that it will accept s^* and only s^* — and that if it does not get s^* it will go to t.

2. B strongly prefers any point in S to t, and so has a large inducement dilemma regarding any point in S. The result: if A credibly threatens to go to t if B will not accept an arbitrary point s^* in S, B will be under strong pressure to accept s^* — whatever it is.

The drama-theoretic reasoning behind these assertions is that if each party is threatening to go to t rather than accept the other's position, there is a tendency for each to solve its inducement dilemma by changing its preferences so as to prefer t to the other's position. If one party changes its preferences in this way while the other does not, the latter will have to concede. But it ought to be easier to make a small preference change than a large one.

> The manner in which the West as a whole "gave in" to the Serbs for a number of years, while they were invading first Croatia and then Bosnia, may seem to exemplify this if we use the very simple model in Table 2. Here the Serbs' first card is meant to stand for choosing to do more or less as they preferred from the set S of possibilities, given to them by the fact that they possessed the strongest military force in ex-Yugoslavia. Their position was that they should continue in this way. The West continually took the position that they should cease. But the West seemed to have a strong preference for allowing the Serbs to continue, rather than go to the threatened future t of military intervention and reprisals against UN personnel. By contrast, the Serbs seemed determined to do as they pleased, even at the risk of Western intervention. The result was that for several years the West continually accepted the Serb position. At least it did so in practice, as it allowed that position to continue being the currently implemented future. It also did so through the defeatist attitudes of many in the West, who argued that the ex-Yugoslavs should be left to settle their affairs in their own way.

W is West's position

S is Serbs' position

t is threatened future

d is default - the future currently being implemented

	W	S	*t*	*d*
WEST				
intervene militarily	☐	☐	■	☐
SERBS				
invade, do ethnic cleansing, etc	☐	■	■	■
retaliate against UN personnel	☐	☐	■	☐

Table 1: Confrontation between Serbs and the West prior to 1995

However, once we state the rationale for this method of assessing power, it becomes clear that "large" and "small" preference differences are not exactly the criteria needed. What matters is rather the relative difficulty that A and B will experience in changing their preferences. We may try to make this the same thing by equating large preference differences with large amounts of "friction" — i.e., with the presence of many factors making it difficult to change preferences. But even if we do this, it remains the case that a disadvantage created by strength of preferences can be overcome by political will, and an advantage nullified by timidity.

Thus suppose that A would seem to have a great deal of power over the set *S* of possibilities if power is assessed by the above criteria — i.e., though A prefers any member of *S* to the threatened future *t*, it is not much harmed by *t* and not much enthused by the elements of *S*, whereas B would be devastated by *t* as compared to the members of *S*. B can nevertheless grab this supposed power from A if:

1. A is a "rational" decision-maker, so won't go to the threatened future *t* even though it only slightly prefers members of *S*; its slight preference is sufficient to deter it, since going to *t* when given the alternative of any member of *S* is irrational by the fixed-preference criteria of economic rationality.

2. B is prepared to be "irrational", being filled with emotion and inspired by religious or nationalistic ideologies that enable it to justify swift, dramatic changes in preference. Thus it is prepared to go to *t*, even though it would be much worse off there (by most standards) than anywhere in *S*, because to allow its choice of a point in *S* to be dictated to it would be considered ignoble and pusillanimous.

Thus in the end it is not the comparative strength of your preferences for elements of *S* over *t* that matters, it is your comparative willingness to go to *t* if you don't get what you want in *S*. Nevertheless strength of preferences is likely to be a factor in this, as determined by objective considerations such as the likelihood of casualties and the likely chance of winning a war. There must certainly be an objective aspect to power as well as a subjective one.

The power of the West

The problem of the power of the US-led Western alliance — its possession of overwhelming economic and military strength hampered by a difficulty in making it effective — would seem to be precisely that it possesses abundant objective power in the above sense but tends to be outdone in subjective power.

We can see this if we re-examine the Bosnia case (Table 2) in light of this distinction between objective and subjective sources of power. Objectively, the Serbs stood to lose far more than the West if the West attacked them militarily. Western commentators expressed fears of having to fight a guerrilla war — but guerrillas generally suffer far greater casualties that those they fight against. Yet it was the Serbs that, prior to 1995, seemed willing to risk intervention rather than give in to Western demands. It was the West that gave in.

In general, the West finds itself intervening in countries with whose people it has few ties, so that it is not greatly interested in their fate, other than on general humanitarian or economic grounds. Furthermore, its technological might means that, by intervening, it exposes itself to (relatively) little danger and few casualties. Intervention is of course expensive, but the Western alliance is rich and has a problem in finding a use and justification for its armed forces, which constitute a considerable political lobby.

All these are factors that increase its power. Those it confronts risk annihilation and devastation if the West attacks them, whereas the West risks relatively little. On objective, rational grounds this should mean that the West can dictate the outcome.

What upsets such calculations is the West's relatively rationalistic attitude and frequent lack of

ideological commitment. Many of those it confronts, though their cards are (militarily) weak, are prepared to risk everything and possess ideologies that justify them in taking such risks. The West, despite the strong cards in its hand, is too often rationalistically prepared to make immediate concessions rather than risk one soldier's life. When this is not so, as with Britain's recapture of the Falkland Islands or America's eventual strong stand in Bosnia, it succeeds.

To make its power more effective in general, the Western alliance simply needs a more general ideological commitment to the universal values it espouses.

Power to enforce agreements

We have distinguished between two kinds of power — the power to influence the position agreed to by parties to a confrontation and the power to make them adhere to the agreed outcome. We need to discuss briefly the second kind of power.

As before, there is a distinction between the exercise of this power at the level of the confrontation we are concerned with and at the level of various subsidiary, related confrontations. The implementation of an agreement often generates a host of sub-dramas between characters involved in its implementation, including dramas between those who have to police it and those who want to evade it. These sub-confrontations have to be analysed and understood as confrontations in their own right, to which the whole of our discussion applies.

> The implementation of the Dayton accords in Bosnia involved many confrontations between IFOR forces and local Serb leaders. Implementation of successive agreements with Iraq has involved confrontations between UN inspectors and Iraqi officials.

We need not discuss these sub-confrontations further, as the same principles apply to them as apply to confrontations in general.

At the level of the agreement itself, there are again objective and subjective factors underlying the power to enforce agreements. Objective factors include technical means of detecting violations and making retaliation automatic. These are again important, and give the Western alliance an unprecedented power advantage.

Where the West may again fall down is in the subjective aspects. Any agreement, being general and simple enough to be negotiated at a high level, necessarily fails to deal in detail with many of the issues it provokes. In order for it to be properly adhered to, it therefore needs the parties to adopt a positive attitude of goodwill and willingness to cooperate. Otherwise they will continually give conflicting interpretations to its general provisions.

Thus an agreement needs to be signed in a positive atmosphere based upon a common commitment and underpinned by common values. The Western alliance possesses a set of universal values adapted to this task, but its overly rationalistic attitude again hampers it.

This works as follows. The "rational actor" model takes players' values and beliefs as fixed. Western rationalists often tend to follow this model in assuming that parties' values are fixed, and hence it is useless to try to convert them to a common set of values. However, this can and must be done if common positions are to be implemented in a satisfactory way.

In Bosnia, individual officers' commitment to and exemplification of Western values was a considerable factor in their success. In Northern Ireland, the need to generate ideological commitment to peaceful, democratic mechanisms is obvious.

The drama-theoretic point is that the political or military realities that have made it possible for parties to take a common position also give them an incentive to adopt a common ideology appropriate to implementing it. Specifically, a party whose attitude is unsupportive can be placed under pressure to change, since the very reasons that led it to agree to the position — viz, the fact that it is preferable to the threatened future — are reasons for it to persuade others that it intends to implement it.

Appendix A – Drama-theoretic dilemmas

This appendix provides simple definitions of the six drama-theoretic dilemmas.

Deterrence dilemma

A deterrence dilemma occurs when a player's fallback position (or a scenario reachable from it) is not sufficiently unpalatable to deter other players. As a result, it is unable to leverage its position.

Definition: Another player prefers the threatened future to the player's position.

Example: A judicial system that uses the death penalty to deter terrorism by religious fanatics faces a deterrence dilemma. These individuals are "happy" to die for their cause.

Potential resolution strategy: A player facing a deterrence dilemma could strengthen its fallback position – e.g., by choosing a new fallback position, or by convincing the other players that they are underestimating the "pain" of the threatened future.

(Note: this is one of several possible resolution strategies. Each dilemma can be resolved in a number of different ways. We will mention only one or two in each case. One way that we do not mention, but which is always available, is to change or abandon one's position.)

Inducement dilemma

An inducement dilemma occurs when the threatened future is unpalatable enough to induce the given player into accepting another's position. How can the player maintain that its fallback position is credible under these circumstances?

Definition: A player prefers the position of another player to the threatened future.

Example: A parent refusing to pay a ransom for a kidnapped child would face an inducement dilemma. She would prefer to pay and have her child returned

Potential resolution strategy: A player facing an inducement dilemma could increase its distaste for the positions held by other players. Alternatively, it could warm to the threatened future. Players often "demonise" other parties' positions to make them unacceptable – e.g., "I'd rather kill myself than give in to that!".

Positioning dilemma

A positioning dilemma occurs when a player adopts a position that it considers to be inferior to another position.

Definition: A player prefers another position to its own.

Example: Before a recent cease-fire in Northern Ireland, Britain preferred the Unionist position (i.e., peace talks after both a cease-fire and IRA disarmament) to its own (i.e., peace talks after a mere cease-fire – a position it shared with IRA/Sinn Fein).

Potential resolution strategy: A player facing a positioning dilemma may reconsider its values, possibly leading to a redefinition of its preference structure.

Threat dilemma

A threat dilemma occurs when a player has an incentive to abandon its fallback position (or threat).

Definition: A player prefers an alternative, reachable future to the threatened future. This differs from the inducement dilemma in that the preferred alternative future is not a player's position.

Example: A threat dilemma occurs in the nuclear mutually assured destruction scenario. If a nation is attacked with conventional weapons, it can threaten to defend itself with nuclear weapons. However, if the aggressor also has a nuclear capability, both nations would be destroyed. It is likely that the nation under attack would prefer to defend itself with conventional weapons, thus undermining its fallback position.

Potential resolution strategy: A player may attempt to make credible its resolution to adopt the fallback position. For example, in the example given above, the defending nation could argue that its conventional capability is too weak to be an effective defence, so both the conventional and nuclear fallback positions lead to similar outcomes (from the perspective of that nation). Given that, the people of that nation would rather take their attackers down with them!

Co-operation dilemma

A co-operation dilemma occurs when a player cannot be trusted to co-operate in implementing its own position.

Definition: A player prefers an alternative, reachable future to its own position.

Example: In the opera "Tosca", Scarpia has a co-operation dilemma. He would prefer to execute Cavaradossi, even if Tosca sleeps with him. How can Tosca be sure that Cavaradossi's life will be spared? This is a dilemma for Scarpia because he wants to get Tosca to sleep with him.

Potential resolution strategy: A player facing a co-operation dilemma could change its preference structure so that its really does prefer its position over any other reachable outcome. It would then have to convince the other players that its preference change was sincere.

Trust dilemma

A trust dilemma occurs when another player has an incentive to deviate from a given player's position (i.e. to abuse the trust that player would like to place in it).

Definition: Another player prefers an alternative, reachable future to a given player's position.

Example: When an inventor approaches venture capitalists she might face a trust dilemma. What is to stop the investors refusing to provide the capital and developing the idea independently? Once an idea has been communicated, the bargaining power it confers is lost. Power based on capital, on the other hand, is far less fragile. This contrast can intensify the trust dilemma.

Potential resolution strategies: A player has to convince others to be ready to adhere to its position - if they accept the position. This could be achieved by inducing others to feel goodwill towards it (e.g., convincing investors that you are the best person to take the idea forward) or legal contracts (e.g., a non-disclosure agreement).

Appendix B – The "card table"

The "card table" metaphor provides a concise visual representation of a drama-theoretic confrontation. Each card table represents a particular stage in a conflict resolution process. Table 3 is an example of a card table representing a stage in the negotiation between the UN and Libya to bring the "Lockerbie bombers" to trial.

> **U** is UN's position
> **L** is Libya's position
> *t* is threatened future
> *d* is default - the future currently being implemented

	U	L	*t*	*d*
UN				
continue sanctions	☐	☐	■	■
act against Gaddafi "assassins"	☐	■	☐	☐
LIBYA				
send accused to Scottish trial in Holland	■	■	☐	■

Table 3: Confrontation over trial of "Lockerbie bombers"

The table documents the players in the game (UN and Libya) and the cards they can play – the UN can decide to continue sanctions, while Libya can send those accused to a trial in Holland under Scottish law. However, it is demanding in return that those responsible for assassination attempts on Colonel Gadaffi's life be brought to trial. Action on this Libyan demand would have to be taken by the UN, hence it is a UN card — one that Libya is demanding that the UN should play.

Two ways of dealing with cards are shown on the table – "playing" them and "not playing" them. They are represented by black and white squares, respectively. "Playing" a card in a column (outcome) means that, in that outcome, the player takes up that option. "Not playing" a card means not taking up that option in that outcome. For example, in the UN's position, Libya sends

suspects to the trial of the "Lockerbie bombers" without the UN taking action against Gadaffi's "assassins", leading to the suspension of sanctions.

Each column of cards represents a potential outcome of the game. In Table 3, there is a column for each player's position, the threatened future and the default future. The threatened future is the outcome that will occur if negotiations break down and all players adopt their fallback positions. In contrast, the default future represents the outcome if players continue to play their existing "hands".

In Table 3, the threatened future is distinguished from the default future by the assumption that a refusal by the UN to acquiesce in trials for Gadaffi's "assassins" will be met with a refusal to co-operate in the Lockerbie bombing trial.

References

Bennett, P.G. (1997). "Confrontation Analysis" in *Modelling International Conflict: Proceedings of a conference run by the Institute of Mathematics and its Applications.* Southend-On-Sea: Institute of Mathematics and its Applications.

Howard, N. (1996), "Negotiation as drama: how 'games' become dramatic." *International Negotiation,* **1**, pp. 1125-152.

Howard, N. (1997). "What is Drama Theory?" and "Drama Theory: the Fundamental Theorems" in *Modelling International Conflict: Proceedings of a conference run by the Institute of Mathematics and its Applications.* Southend-On-Sea: Institute of Mathematics and its Applications.

Howard, N. (1998), "N-person 'soft' games." *Journal of Operational Research Society,* **49**, pp. 144-50.

Shapley, L.S. and M. Shubik. (1954). "A method for evaluating the distribution of power in a committee system." *American Political Science Review,* **48,** pp. 787-792.

Weber, M. (1948). *From Max Weber: Essays in Sociology.* London: Routledge and Kegan Paul.