



E-PARCC

COLLABORATIVE GOVERNANCE INITIATIVE

Syracuse University

Maxwell School of Citizenship and Public Affairs

Program for the Advancement of Research on Conflict and Collaboration

Gray Wolf: Fairness and Justice in Collaborative Governance Teaching Notes

This is a six-party, multi-issue, scorable negotiation involving a dispute over the establishment of a hunting season for the gray wolf in a Great Lakes state. It introduces and explores concepts of fairness and justice in a collaborative governance regime.

This negotiation is based on facts and figures related to the establishment of a wolf-hunting season in Minnesota in 2012. It is meant to portray a realistic collaborative effort to manage wolf populations with a small degree of fictionalization. The stakeholders in this negotiation represent diametrically opposing views; however, there is room in the issues and options agreed upon to find a distributively fair and procedurally just solution for all members.

Scores are used to evaluate outcomes with respect to distributive fairness. Students learn how to evaluate outcomes with respect to what is fair. Two approaches to distributive justice are explored here: the Nash Solution, and the Maximin Solution. Students also explore notions of procedural and interactional justice as the negotiation plays out.

Scorable negotiation simulations are useful in that students are able to compare their scores with their classmates' at the completion of the exercise. One problem with scorable negotiations however, is that as negotiators attempt to gain points during the negotiation, the points themselves can become a stimulus for distributive bargaining. The focus of the negotiation tends to shift from the work of seeking options that satisfy their interests and the interests of the other negotiators, to that of scoring points. This simulation prevents this from happening by stating the negotiators' preferences in clear, qualitative terms in their confidential instructions. The negotiation is then scored at the completion of the exercise based on the agreements reached.

This simulation was a first place winner in E-PARCC's 2012-13 "Collaborative Public Management, Collaborative Governance, and Collaborative Problem Solving" teaching case and simulation competition. It was double-blind peer reviewed by a committee of academics and practitioners. It was written by Lauren Elizabeth Colwell and Steve Smutko of the Haub School of Environment and Natural Resources, University of Wyoming. This simulation is intended for classroom discussion and is not intended to suggest either effective or ineffective handling of the situation depicted. It is brought to you by E-PARCC, part of the Maxwell School of Syracuse University's Collaborative Governance Initiative, a subset of the Program for the Advancement of Research on Conflict and Collaboration (PARCC). This material may be copied as many times as needed as long as the authors are given full credit for their work.

Scenario

The issues at stake in this negotiation simulation involve details regarding the planning and implementation of a new gray wolf hunting season in a Great Lakes state for the purpose of population control and recreation rather than solely for depredation management. The U.S. Fish & Wildlife Service delisted the gray wolf (*Canis lupus*) from the Endangered Species List and management of the species has shifted to state control under the State Department of Natural Resources. The population of nearly 3,000 gray wolves in the state is the largest in the lower 48 states.

This negotiation will decide for the first time the size and location of hunting areas, the methods of hunting, the number of licenses and maximum harvest allowed, and the extent of further scientific studies. The six central stakeholders in this negotiation are:

- A spokesperson for a coalition of conservation groups
- A representative of the Hunters and Trappers Coalition
- A representative of the State Cattlemen's Association (CA)
- The Commissioner of the State Department of Agriculture (DA)
- The Wildlife Division Director of the State Department of Natural Resources (DNR)
- A representative of the Native American Game and Fish and Game Agency (NAFGA)

These groups have met before and will likely work together again in the future, and thus an important part of the negotiation is ensuring that the stakeholders treat each other with respect.

Logistics

Preparation time: 90 minutes

Negotiation time: 2 hours minimum

Debrief time: 1 hour

This simulation can be run with either 12 negotiators (two per role) or six negotiators (one per role). Multiple groups can be run simultaneously. A manager is needed to conduct periodic votes and to answer questions.

Materials Checklist:

Students

1. General information which includes:
 - a. Background information
 - b. Description of participants
 - c. Description of issues and options
 - d. Meeting instructions and ground rules
2. Confidential instructions for each role (6)
3. Preparation of Negotiation Worksheet
4. Instructions for Determining Negotiators' Scores
5. Final Score Sheets

Instructor

1. Instructions for Determining Negotiators' Scores
2. Optimal Agreements
3. Negotiators' Scores from Optimal Agreements

Operating Procedures

Preparation should be done both individually and in groups. Hand out instructions to students prior to the simulation so that students can study the scenario and their roles individually. Allow 30 minutes for students to read the materials. It is best to hand out the materials a day in advance so that individual preparation time does not take up class time. Do not hand out the *Instructions for Determining Negotiators' Scores and POPs* and the individual final score sheets before the negotiation begins; rather, hand these out after the third and final vote.

After the students have read the material, have them meet in groups of their respective roles (e.g., all students assigned to the Hunters and Trappers Coalition meet together). In their groups, the students will work through the *Preparation for Negotiation Worksheet* by discussing and answering the questions. Allow 45 minutes for group preparation.

Before starting the negotiation, make sure that everyone understands the general instructions and the mechanics of the negotiation.

1. Answer questions about the General Information.
2. Explain that your role is to observe and assist with the negotiation process. You will call for formal votes throughout the negotiation and keep track of time.
3. Explain that the Division of Wildlife Director is the convener and the host of the meeting. This individual will lead the discussion on meeting ground rules and manage group votes.
4. In order to be accepted by the State DNR Commission, the final decision must be approved by at least 5 of the 6 stakeholders. Whether or not the NAFGA must be party to the agreement is up to the group.
5. There will be three formal votes taken during the course of the negotiation:
 - a. Vote #1 will be taken 15 minutes into the negotiation
 - b. Vote #2 will be taken 1 hour into the negotiation
 - c. Vote #3 will be taken 2 hours into the negotiation

You will call for the votes at the appropriate time

6. The negotiation is complete when at least 5 of the parties settle. After settlement is reached, instruct the participants how to score their results.
7. Demonstrate how to calculate negotiator scores and POPs (Proportion of Potential).
8. Display the each group's settlement and the score and POP for each negotiator. Also display the settlement and scores for the optimal agreements.
9. Debrief the negotiation.

Instructions for Determining Negotiators' Scores and POPs

After the Division of Wildlife Director holds the final vote and the group reaches an agreement, each negotiator must tally his/her "score" for the negotiation. This score represents the degree to which each negotiator achieved his/her prioritized interests based on the confidential qualitative descriptions of each issue and option.

The option numbers and option values for each issue are given in the "Final Score Sheet" tables. Under the "Final Agreement" column, the students will put an 'x' in the box for each option that negotiators agreed to in the final vote. In the "Score" column the students will write the option value for the agreed-upon options. At the bottom of the column, the students will sum the scores to determine his/her final score. An example is given below:

Issues	Option	Option Value	Final Agreement	Score
Zones of Hunting	1	25	X	25
	2	15		
	3	0		
Hunting Methods	1	15		
	2	6	X	6
	3	0		
Licenses & Harvest	1	50		
	2	45		
	3	10	X	10
	4	0		
Scientific Studies	1	10		
	2	6	X	6
	3	0		
Sum =				47

The *proportion of potential (POP)* for each negotiator is calculated from three values: (1) the negotiator's score; (2) the negotiator's reservation value; and (3) the negotiator's maximum feasible score.

1. The negotiator's score is derived as described above.
2. The reservation value is ideally calculated by each negotiator and is the sum of option values from the combination of options that meet the negotiator's minimum requirements. For this exercise, each negotiator's reservation value has been assigned.

3. The maximum feasible score is a function of the all of the negotiator's option values and is estimated through a separate calculation, and may vary significantly between negotiators.

Reservation values and maximum feasible scores for each negotiator are:

Negotiator	Reservation Value	Maximum Feasible
Conservation Groups	40	86
Hunter Coalition	40	85
State Cattlemen's Association	30	50
Native American Fish & Game Agency	40 or 60	85
State Department of Agriculture	40	80
State Department of Natural Resources	40	85

Each negotiator's *potential* is the value of points between the reservation value (the negotiator's minimum) and the maximum feasible score. For example, the potential for the Conservation Groups negotiator is 46 ($86 - 40 = 46$).

To calculate a negotiator's *proportion* of potential you first need to know the negotiator's *excess value*. The excess value is the difference between the negotiator's final score and his/her reservation value. In essence, it represents how far above the reservation value the negotiator settled. Then we divide the excess value by the negotiator's potential.

The best possible final score for any negotiator will be equal to his/her maximum feasible score, and thus the proportion of potential will be 100%. If the negotiator settles at his/her reservation value, the proportion of potential will be 0. By looking at the range in POP values at the end of a negotiation, we can quantify how well each negotiator achieved his/her preferred options relative to the other participating negotiators.

Example:

Score (S) = 47

Reservation Value (RV) = 40 Maximum Feasible Score (MFS) = 86

Excess Value (EV) = $S - RV$ or $47 - 40 = 7$

$$POP = \frac{EV}{MFS - RV}$$

$$POP = \frac{7}{(86 - 40)} = \frac{7}{46} = 15.2\%$$

Discussion

Negotiations occur in a rich and complex social environment that has a significant impact on the way the parties interact, how the process evolves, and how the parties perceive negotiated outcomes. Issues of fairness and justice are often at the center of a negotiation, particularly in circumstances where the parties' relationships are an important component the social context. Negotiators' perceptions of fairness influence the bargaining process, help parties to work toward agreement, and determine whether the outcome will be viewed as satisfactory.

Lewicki et al. (2009), describe four forms of fairness or justice in the context of negotiation:

Distributive justice is about the distribution of negotiated outcomes. Parties may be concerned that one party is receiving more than he or she deserves, or that their own allocation of negotiated gains is far too low. Negotiators tend to view a fair distribution as an equitable one, and that all parties should split the gains equally. While equitable distribution may be perceived as fair, it is usually not the "best" allocation. Instead, two other approaches to distributive fairness that take into consideration the strength of negotiators' preferences can result in more efficient outcomes. These two approaches, the Nash Solution and the Maximin Solution are described in greater detail later in this teaching note.

Procedural justice is about the negotiation process itself. Parties tend to view the process as fair if they feel that they were treated fairly by the other negotiators, and that the logistics and process did not skew the outcomes to favor any single party. With respect to multi-party, public policy negotiations, participants view a fair process as one in which all groups who have standing in the decision are given a chance to participate, all parties are given an equal opportunity to express their views, technical information is available to all, the people involved are accountable to the constituencies they represent, and there is a means for due process complaints to be heard at the conclusion of the deliberation.

Interactional justice is about how the parties treat each other during the negotiation process. People have strong expectations about the way they will be treated by the other parties in a negotiation. When another party practices deception, is not candid or forthcoming, acts rudely, makes discriminatory remarks or statements, or makes rash decisions or actions without justification, negotiators feel that fairness standards have been violated.

Systemic justice is about how organizations appear to treat groups of individuals. When some parties are discriminated against as a group, the parties may be less concerned about specific procedural issues and more concerned that the overall system is biased in its treatment of them. At its core, systemic justice is about the effective engagement of traditionally low-power groups in negotiation.

Distributive Justice – The Nash and Maximin Solutions

When we think of fairness in terms of the distribution of gains from negotiation, we must consider the parties' preferences, and the strength of those preferences, for specific interest-based outcomes. When parties engage in integrative negotiation, they are sharing information about their needs and interests, and the relative importance of their interests to them so that they can devise potential solutions that satisfy their most important interests. In this way, they are engaging in value creation, enlarging the proverbial pie before dividing it. If in the final allocation of negotiated gains, in the value claiming stage of negotiation, they then ignore what is

most important to them, and say, divide the gains equally, they will have gained little for their efforts. For example, in a negotiation in which the parties are distributing money between them, if one party is money poor and the other is money rich, each additional dollar to the rich party means less than an additional dollar to the party who is poor. A fair distribution might be one in which the rich party settles for, say, one-third less money than the poor party and both are equally happy with the result.

In addition to strength of preference, another factor related to fairness is the ability of each party to achieve his or her potential. There are physical limitations to the amount of value that can be created in any negotiation. There is only so much of a resource that can be distributed, no matter how crafty the parties may be in their ability to think creatively. Each negotiator is faced with a maximum feasible value that he or she can derive from the exchange and which cannot be exceeded. This maximum value is a function of their preferences.

Figure 1 illustrates this concept of finite possibilities with what we can call the efficient frontier. Figure 1 shows the frontier for two negotiators, Ann and Bob. Both negotiators are attempting to maximize the benefits that will accrue to them by virtue of their superior negotiating skills. Ann is striving to go rightward (east) along the x-axis of the graph, while Bob is working hard to go upward (north). Ideally, Bob and Ann will attempt to “go northeast” and try to find an agreement that puts them on the frontier.

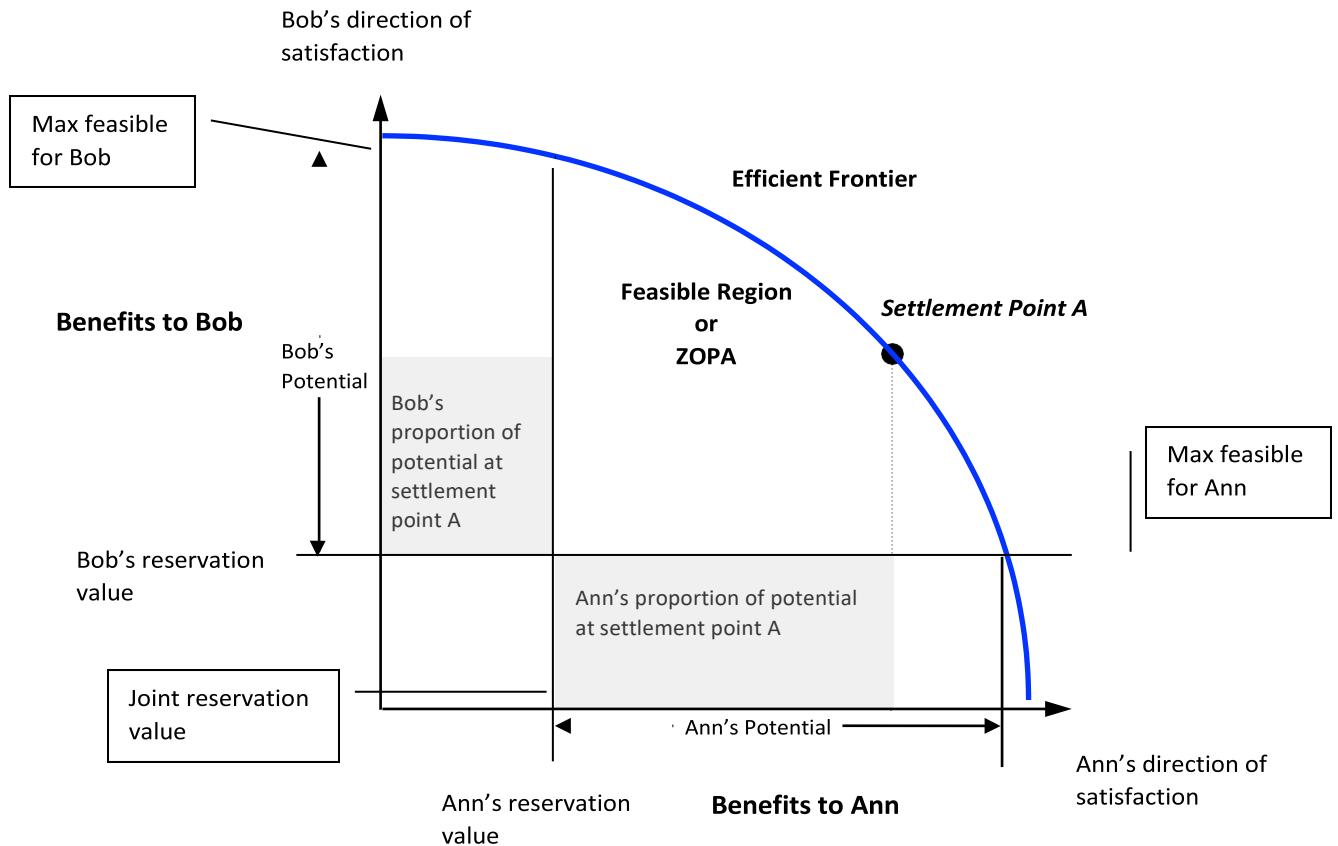
Ann and Bob have a pretty good idea of the lowest amount they will settle for, their respective reservation values (often equated to their BATNAs). Neither will settle below their reservation value. The area bounded by their reservation values and the efficient frontier is called the feasible region or the Zone of Possible Agreement (ZOPA). Agreement can occur anywhere in this region. However, while many options exist, some are better than others. The best agreements are those that land on the frontier. The maximum amount to be gained by either negotiator is defined as the distance between their reservation value and frontier. This is their potential.

While Ann and Bob are very aware of their reservation values, they don't know their maximum feasible point and thus their potential. They attempt to discover their potential by sharing information about their preferences, and engaging in the give and take of bargaining. As they seek agreements that take them out to the frontier, they ask one another, “is this the best agreement we can reach, or can we both do better?” If the answer to that question is yes, then they are not yet on the frontier. Once on the frontier, the answer is no. No party can be made better off without the other being made worse off. During negotiation, each party is attempting to fully reach his or her potential. Some parties are able to achieve a large proportion of their potential, and some not so much.

Say that Bob and Ann work hard to find an agreement that places them on the frontier and land at Settlement Point A. At this point both will achieve some proportion of their potential. In this case, Ann achieves a greater proportion of her potential than does Bob.

So now we have the ingredients for understanding two ways of defining distributive justice, or fairness: strength of preference, the efficient frontier, and proportion of potential (POP). What is a fair agreement? Or in other words, what is a fair point on the efficiency frontier?

Figure 1. Illustration of the Efficient Frontier and Proportion of Potential



One approach to fairness was originally suggested by the economist, John Nash and helped him win the Nobel Prize. The Nash solution is all about strength of preference. **The Nash Solution** deals with the following question: once you land on the frontier, say at Settlement Point A, should you move to another point on the Frontier, or stay at Point A? The Nash Solution says, in effect, that the tradeoff among two negotiating parties will be considered fair if and only if the proportional gain for one negotiator of moving from Point A to another point on the frontier is more than the proportional loss to the other. So the Nash Solution is the point on the frontier in which any movement from this point will not satisfy this condition. It is the socially optimal maximum.

A second measure of fairness can be specified in terms of the differences in each negotiator's proportion of potential. A powerful fairness criterion is the **Maximin Solution**. The Maximin Solution says this: let's find a place on the frontier that maximizes the minimum proportion of potential among us. Let's do the best for the least fortunate of us. The effect of the Maximin Solution is to find a point on the frontier that approximates the middle. For two parties, the point that maximizes the minimum is the point where each gets 50% of his potential; the midpoint. Remember, the proportion of potential we are concerned about here is the potential benefits gained from the negotiated outcome as indicated by each negotiator's strength of preference for various outcomes in the bargaining mix.

Debriefing

Hand out final score sheets to all participants and explain how to derive (1) their final scores, and (2) their proportion of potential (POP). Once calculated, the students return their sheets to the instructor.

For each negotiating group, display the scores and POPs for each negotiator and the final agreement (the options agreed to by the negotiators).

Display the scores and POPs from the Optimal Agreements (See Appendix 1 and Appendix 2).

Describe the Nash Solution and the Maximin Solution.

What Happened

1. What happened? How did you finally get to an agreement?
2. Overall, how satisfied are you with the outcome of the negotiation? What was challenging about the process and/or about your stakeholder's position?
3. You were engaged in a scorable negotiation simulation in which your preference point values and final scores were not available to you until after you reached agreement. Are the scores meaningful to you? Do you think you would have negotiated any differently if you had access to your point values during the negotiation?
4. Why might the scores and Proportion of Potential vary between groups? If one of the negotiating groups arrived at an optimal solution, ask what transpired in the group.
5. Identify the people who got the highest Proportion of Potential for each role. What were their strategies?
6. Identify the people who got the lowest Proportion of Potential for each role. What happened?
7. What did the participants learn from the exercise?

Negotiation Context

8. Did any coalitions form during the negotiation? If so, were they stable or fragile, and who was involved?
9. To what extent was new value created during the negotiation process? Were any specific incentives offered to move toward an agreement?

Fairness

10. There are four forms of justice or fairness (describe distributive, procedural, interactional, and systemic justice). Which forms of fairness did you encounter in this exercise?
11. The Division of Wildlife Director was in charge of discussing and enforcing procedural rules regarding mutual respect and allowing equal opportunity to express interests and values. In your opinion, how well were these rules followed? Did you feel that it was a fair process? How did your perception of procedural fairness influence how you negotiated and how you treated other negotiators?
12. How did you react to the initial vote to decide whether the NAFGA representative would be a required stakeholder to approve a final decision? Did you change your vote on this stipulation during the negotiation?
13. Ask the NAFGA role players if they perceived that the other negotiators respected his/her values related to the spiritual nature of the gray wolf. Was transactional justice an issue within your negotiating group?
14. Native American Tribes are sovereign nations and are usually not represented in discussions of a state's laws and regulations. In this case, a coalition of tribes was being represented by an individual. Are there fairness issues associated with that? Can collaborative process like this ever be fair when tribal issues are at stake? How can we assure systemic justice in situations where representation is an issue?

References

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Appendix 1: Table of Optimal Agreements

Optimal Agreements

Issue	Option	NAFGA RV=40		NAFGA RV=60	NAFGA Voted Out	
		Nash	Maximin	Nash/Maximin	Nash	Maximin
Zones of Hunting	1			x		
	2	x	x		x	x
	3					
Hunting Methods	1					
	2	x		x	x	
	3		x			x
Licenses & Harvest	1					
	2	x	x		x	x
	3			x		
	4					
Scientific Studies	1	x	x	x		
	2				x	x
	3					

Appendix 2: Scores from Optimal Agreements

Scores from Optimal Agreements

If NAFGA Representative has an **RV** of **40**:

Parties	Nash Solution	Nash POP	Max Solution	Max POP	Max Feasible
Conservation Groups	76	0.74	61	0.43	89
Hunters Coalition	60	0.47	62	0.51	83
State Cattlemen's Association	74	0.69	84	0.84	94
Native American Fish & Game Agency	55	0.28	45	0.47	93
State Department of Agriculture	55	0.30	65	0.2	90
State Department of Natural Resources	45	0.13	50	0.13	78

If NAFGA Representative has an **RV** of **60**:

Parties	Nash Solution	Maximin Solution	POP	Max Feasible
Conservation Groups	51	51	0.24	86
Hunters Coalition	75	75	0.78	85
State Cattlemen's Association	44	44	0.70	50
Native American Fish & Game Agency	85	85	1.00	85
State Department of Agriculture	75	75	0.88	80
State Department of Natural Resources	60	60	0.44	85

If NAGFA Representative is voted out of negotiation:

Parties	Nash Solution	Nash POP	Maximin Solution	Maximin POP	Max Feasible
Conservation Groups	72	0.70	66	0.57	89
Hunters Coalition	65	0.54	70	0.65	86
State Cattlemen's Association	80	0.77	78	0.74	95
State Department of Agriculture	60	0.37	60	0.37	94
State Department of Natural Resources	80	0.68	76	0.61	99