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THESIS

**COGNITIVE BARGAINING MODEL:
AN ANALYSIS TOOL FOR THIRD PARTY INCENTIVES?**

by

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December 2009

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AN ANALYSIS TOOL FOR THIRD PARTY INCENTIVES?**

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ABSTRACT

Although threats and punishments have historically been the more prevalent tools of U.S. foreign policy, the current U.S. administration is signaling a reorientation toward a more positive inducement strategy. Much is written on incentives, but few have taken an in depth look at how third parties should properly place incentives to maximize their effect. This thesis suggests that a cognitive bargaining model may provide a useful analysis tool for deciding when and where to use positive incentives. The model proposed in this thesis uses James Fearon's rational bargaining and war theory as a base. Then, by folding in Prospect Theory, a bargaining model is developed that can account for the effects of third party incentives. This model is put to the test by looking at Ukraine's denuclearization in the early 1990s. Using the cognitive bargaining model as a framework, Ukraine's bargain reached via the Lisbon Protocol in 1992 is compared to the one achieved in the 1994 Trilateral Agreement. This thesis finds that the cognitive bargaining model provides a useful analysis tool, and recommends further development of this model so that future offers of incentives by the United States achieve the most "bang for the buck."

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TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	BACKGROUND	1
B.	LITERATURE	3
C.	PURPOSE OF THIS PAPER	11
II.	THE COGNITIVE BARGAINING MODEL	13
A.	MIXING APPLES AND ORANGES?	20
B.	MODEL CONSTRUCTION.....	22
1.	Assumptions	23
2.	Independent Variables.....	25
3.	Dependent Variable	31
C.	THIRD PARTY EFFECTS.....	32
D.	CARROTS VS. STICKS	37
III.	UKRAINE’S 1992 BARGAIN	39
A.	HISTORICAL CONTEXT	40
B.	THE 1992 BARGAIN	41
IV.	UKRAINE’S 1994 BARGAIN	55
A.	WHAT CHANGED?	55
B.	THE 1994 PROPOSAL—X₂ (THE PROPOSED 1994 BARGAIN).....	62
C.	THE FINAL 1994 AGREEMENT—X₂ (THE FINAL 1994 BARGAIN)	63
V.	CONCLUSION	67
A.	MODEL LIMITATIONS.....	67
B.	POLICY IMPLICATIONS.....	69
C.	FOR FUTURE STUDY	71
	LIST OF REFERENCES	75
	INITIAL DISTRIBUTION LIST	81

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LIST OF FIGURES

Figure 1.	Advantages and Disadvantages of Positive Incentives.....	9
Figure 2.	Fearon's Bargaining and War Model.	17
Figure 3.	Subjective Utility Function.....	20
Figure 4.	Fearon's Model vs. The Cognitive Bargaining Model	23
Figure 5.	Cognitive Bargaining Model Assumptions.....	25
Figure 6.	Lose-Lose Scenario (Negative Sum Game).....	27
Figure 7.	Win-Win Scenario (Positive Sum Game).	27
Figure 8.	No-Win/Lose (Zero Sum Game).	28
Figure 9.	Subjective Utility Functions in the Cognitive Bargaining Model	29
Figure 10.	Effects of Third Party Incentives.	33
Figure 11.	Poor Situations for Incentives.....	36
Figure 12.	Conflicts throughout the FSU in 1990–1991.	40
Figure 13.	Probability of Ukraine Winning a War with Russia	44
Figure 14.	Ukraine's Perceived Utility for War.....	44
Figure 15.	Russia's Perceived Utility for War.....	46
Figure 16.	Ukraine's Perceived Status Quo.....	48
Figure 17.	Russia's Perceived Status Quo	49
Figure 18.	Subjective Utility Functions Overlaid through Status Quos.....	50
Figure 19.	1992 Lisbon Protocol Agreement.	53
Figure 20.	1994–Small Change in Probability of War Victory.....	59
Figure 21.	1994–Small Change in Russia's Costs for War	59
Figure 22.	1994–No Shift in Ukraine's Cost of War	60
Figure 23.	1994–Ukraine's Shift in Perception of Status Quo	61
Figure 24.	1994–No Change in Russia's Status Quo Perception.....	62
Figure 25.	Proposed 1994 Bargain.	63
Figure 26.	1994 Bargain—The Trilateral Agreement.	64

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LIST OF TABLES

Table 1.	Range of Influence Strategies	4
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LIST OF ACRONYMS AND ABBREVIATIONS

CIS	Commonwealth of Independent States
EU	European Union
FSU	Former Soviet Union
GDP	Gross Domestic Product
ICBMs	Intercontinental Ballistic Missiles
ICC	International Criminal Court
Jem	Justice and Equality Movement
NPT	Nuclear Non-Proliferation Treaty
SLA	Sudan Liberation Army
U.S.	United States
UN	United Nations

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I. INTRODUCTION

A. BACKGROUND

In 2003, the Sudan Liberation Army (SLA), and Justice and Equality Movement (Jem), attacked the government in Sudan in response to the government's oppression of black Africans. Since the outbreak of violence in 2003, the United Nations (UN) believes that 2.7 million Sudanese have been forced to leave their homes and up to 300,000 died, making the conflict in Darfur one of the worst humanitarian crises in decades. Many accuse President Omar Hassan Ahmed Bashir of sponsoring the ongoing genocide against those who oppose his government in Sudan. In fact, the International Criminal Court (ICC) issued a warrant for the arrest of President Bashir in early 2009. However, despite international condemnation, arrest warrants for President Bashir, tough sanctions, and peacekeeping efforts from the UN and African Union, this conflict is no closer to an end in 2009 than it was in 2003.¹ On October 19, 2009, Secretary Hillary Rodham Clinton announced a new U.S. foreign policy toward Sudan, which "involves a menu of incentives and disincentives to achieve the Obama administration's goals."² President Obama stated, "If the government of Sudan acts to improve the situation on the ground and to advance peace, there will be incentives."³ Details of the incentives offered are not known, but the debate about whether to offer incentives or tougher sanctions has been ongoing for several months. Susan Rice, United States Ambassador to the UN, argued for tougher sanctions, whereas Retired Gen. J. Scott Gration, the administration's special envoy to Sudan, proposed an end to sanctions to win support from the Sudanese population.⁴ Secretary Clinton and President Obama's offer of incentives to Sudan, along with announcements that the United States is willing to sit down and talk with rogue

¹ BBC News, "Q&A: Sudan's Darfur Conflict," <http://news.bbc.co.uk/2/hi/africa/3496731.stm> (accessed October 21, 2009).

² Ibid.

³ BBC News, "Obama Offers Sudan 'Incentives'," <http://news.bbc.co.uk/2/hi/africa/8314817.stm> (accessed October 22, 2009).

⁴ Paul Richter, "U.S. Unveils New Sudan Policy of Carrots and Sticks," *Los Angeles Times*, October 20, 2009, <http://www.latimes.com/news/opinion/editorials/la-ed-sudan21-2009oct21,0,6997528.story> (accessed October 22, 2009).

regimes from Iran and North Korea, signifies a distinct shift in the foreign policy strategy of the United States from punishments to inducements, which is a departure from past U.S. foreign policy that relied much more on sanctions and military threats.

The historical contrast between inducement and punishment efforts in U.S. foreign policy is made clear by inspecting the U.S.' annual foreign assistance spending versus defense spending. The United States offers incentives through many branches of government. Arguably, the organization most responsible for providing incentives is U.S. aid. In 2007, the state operations plus the foreign assistance budget for U.S. aid totaled \$34.9 billion.⁵ The total U.S. government discretionary spending budget for 2007 was \$870 billion.⁶ For 2007, the money available for incentives through U.S. aid equated to approximately 4% of the government's discretionary spending authority. In a comparison with the Gross Domestic Product (GDP) of the world's countries, 78 of 210 countries have a GDP greater than \$34.9 billion, and over 61 countries have a GDP that is over double \$34.9 billion.⁷ During the height of U.S. foreign aid spending, which occurred during the Marshall Plan after WWII (1947–1951), the United States only reached \$64 billion annually (as converted into 2004 U.S. dollars).⁸ While \$64 billion may seem like a lot, it represents only 3% of the U.S.' GDP at that time.⁹ Defense spending, in contrast, has always been a magnitude greater. In 2007, defense received \$437 billion of the U.S. government's discretionary spending,¹⁰ which equates to 50% of the U.S.' discretionary spending budget. The U.S. GDP in 2007 was \$13.7 trillion, which means the United States spent .25% of its GDP on incentives and 3.2% on defense.¹¹ It is clear that the

⁵ USAID Web site, http://www.usaid.gov/policy/highlights07/highlights_33.html (accessed October 21, 2009).

⁶ OMB Web site (GPO Office), <http://www.gpoaccess.gov/usbudget/fy07/pdf/budget/tables.pdf> (accessed October 21, 2009).

⁷ World Bank Web site, Quick Reference Tables, <http://siteresources.worldbank.org/DATASTATISTICS/Resources/GDP.pdf> (accessed October 22, 2009).

⁸ Curt Tarnoff and Larry Nowels, CRS Report: "Foreign Aid: An Introductory Overview of U.S. Programs and Policy," *Library of Congress* (April 15, 2004): 30–31.

⁹ Ibid.

¹⁰ OMB Web site (GPO Office).

¹¹ World Bank, Data and Statistics, Lookup of U.S., <http://go.worldbank.org/R3KBDH8YM1> (accessed October 22, 2009).

United States has invested heavily into a credible “stick” for enforcing sanctions and other punishment strategies. This is not to say that the money spent on incentives or defense has not been necessary. However, it does illustrate that the United States has historically invested more resources into the capability to execute punishment strategies instead of inducement strategies.

It is possible to argue that \$34.9 billion is an ample amount to achieve U.S. foreign policy goals. Even so, it is obvious that resources for incentives are not unlimited. In other words, policy makers choosing to offer incentives must do so in the most economical and efficient way possible. Therefore, the United States should provide incentives only when necessary to achieve policy goals, in the right amount, and to the right persons. Let us look again at the choice to offer incentives to Sudan. The United States is neither a challenger nor defender in the conflict in Darfur. However, it has a third party policy objective of gaining an ally (Sudan) in the war on terrorism. The United States is faced with several choices. It must choose which side to incentivize. The United States could provide positive inducements to the challengers, the government of Sudan, or both sides to end the conflict. In other words, assume that the United States is willing to put \$10 million toward a positive incentive package to achieve its foreign policy goals in Sudan. It could offer all \$10 million to just the Sudan government, \$10 million to just the SLA and Jem, or \$6 million to the Sudan government and \$4 million to the SLA/Jem. Furthermore, if the Sudan government is willing to comply with United States wishes for \$3 million and the offer is \$10 million, the United States has overspent. This begs the question, “How to maximize the effects of the limited resources put toward positive incentives to most efficiently achieve U.S. foreign policy goals?”

B. LITERATURE

To answer how to maximize the effects of incentives, it is necessary to look to academic literature for insight. Positive influence strategies are a growing body of literature in the academic world, which notably resurged after the fall of the Soviet Union in 1991. As the world transitioned away from a bipolar world, within which there was a realist dominated foreign policy relationship, many noticed that the tough stances

prescribed by realism were not having the desired effect. Iraq, Iran, North Korea, and Syria all endured the toughest U.S. sanctions and best diplomatic efforts with little effect. People began to remember that the, “primary goal of foreign policy is to change a state’s desires, not necessarily defeat them militarily.”¹² The following review of literature on positive incentives in this thesis is important for three reasons. It provides a basis for where incentives fit into overall influence strategies, outlines the current thoughts and debates surrounding positive incentives, and identifies some important gaps in knowledge.

To begin with, there are four basic influence strategies, which are not necessarily mutually exclusive, but distinguishing between them allows for intellectual clarity. At the most basic level, one state attempts to influence another state through either rewards or punishments, which can take two forms, military and economic. Military threats fall into the category of coercive diplomacy. Military rewards are reassurances, which commonly take the form of security guarantees. Economic threats are often expressed through sanctions. Economic rewards are positive incentives. Table 1 shows the four primary influence strategies. This thesis focuses on the positive side of strategies, reassurances and incentives. Further, although reassurances and incentives are difficult to disentangle in real world applications, this thesis concentrates solely on the incentives when possible.

<i>Tool</i>	<i>Threat</i>	<i>Promise/Reward</i>
<i>Military</i>	Coercive diplomacy	Reassurances
<i>Economic</i>	Sanctions	Incentives

Table 1. Range of Influence Strategies¹³

Where does the current academic literature stand, regarding positive incentives? What do authors generally agree about, and on what do they disagree? Some authors focus on defining the advantages and disadvantages of positive incentives. Other studies

¹² Stanley E. Spangler, *Force and Accommodation in World Politics* (Maxwell Air Force Base: Air University Press, 1991), xiii.

¹³ Jeff Knopf, Class notes, NS4669, “Conflict and Cooperation in World Politics,” September 9, 2009.

identify characteristics of incentives that increase their chances of success. Much debate occurs about how best to weave incentives into a comprehensive foreign policy strategy. Most literature on incentives uses comparative case studies as evidence, with a few looking to empirical evidence when analyzing characteristics of successful incentives. For the purposes of this thesis, positive incentive authors are grouped into the pessimists, optimists, and the mixed strategists.

Most critics of incentives focus on the disadvantages and challenges of implementing incentive strategies. Wagner argues that sanctions are more effective than incentives at bringing about compliance. Therefore, incentives are a less desirable option.¹⁴ Remmer argues that foreign aid actually increases target state's spending while reducing the revenue generation. In other words, foreign aid fosters rent-seeking.¹⁵ Remmer cites Van De Walle, 2001, who says foreign aid has allowed politicians to channel the aid to benefit themselves and their supporters, but has not done much to generate desired policy changes in target states.¹⁶ Alfie Kohn argues that incentives are effective at securing short-term compliance, but are poor at changing underlying motivations.¹⁷ He argues that rewards are not a primary motivator, they punish by leaving out others from offers of incentives, they rupture relationships by promoting competition instead of cooperation among other states, they ignore the reasons for conflict, they

¹⁴ William J. Long, "Trade and Technology Incentives and Bilateral Cooperation," *International Studies Quarterly* 40, no. 1 (March 1996): 79, referring to Wagner's 1988 work.

¹⁵ Karen L. Remmer, "Does Foreign Aid Promote the Expansion of Government," *American Journal of Political Science* 48, no. 1 (January 2004): 77.

¹⁶ Ibid.

¹⁷ Alfie Khon, "Why Incentive Plans Cannot Work," *Harvard Business Review* (September–October: 1993), 56–59, http://home.ubalt.edu/tmitch/641/kohn_93_why_incentives_don't_work.pdf (accessed October 21, 2009). Although Khon focuses on the effect on individuals in a business, the principles logically fit the behavior of states as well. The concepts he developed are put into state-state relations terms from the individual terms that Khon uses.

discourage risk taking, and they undermine the core interests.¹⁸ Other critics argue that the extortion, moral hazard, and problems enforcing linkages with positive incentives make them less preferable when compared to sanctions.¹⁹

Positive incentive optimists tend to believe that incentives can solve a wide array of foreign policy problems. Both Nincic, and Haas and Sullivan fit this characterization. Nincic argues that when incentives are viewed from a long-term total utility view instead of just an immediate marginal utility perspective, it is clear that incentives are very useful. Nincic makes a distinction between “trading carrots” and “catalytic carrots.” If a regime is unstable, incentives have a greater chance of becoming catalytic by reducing any rally-around-the-flag effect in the target state, bolstering the business class (“commercial bourgeoisie”), which typically is more open to better trading relationships, and modifying the future motivations of the target state. At the end of his article, Nincic implies that a “world without renegade regimes and nuclear proliferation” is possible by use of positive incentives. Nincic tends to ignore ethical issues, such as rewarding repulsive regimes, that are associated with positive incentives, mainly because he focuses on nuclear nonproliferation.²⁰

Similar to Nincic, Haas and Sullivan, distinguish between two types of positive engagement. They define conditional engagement as a strategy that employs carrots in a tit for tat style. In contrast, unconditional positive engagement employs carrots without a linkage that requires some type of reciprocal action. They argue that incentives improve the sender’s image in international eyes, and may lead to opportunities down the road.²¹ They say the best candidates for conditional incentives are those countries where decision making is highly concentrated. They would agree with Nincic that countries in trouble

¹⁸ Miroslaw Nincic, “The Logic of Positive Enragement: Dealing with Renegade Regimes,” *International Studies Perspectives* 7 (November 2006): 324.

¹⁹ Thomas Bernauer and Dieter Ruloff, *The Politics of Positive Incentives in Arms Control* (Columbia: University of South Carolina Press, 1999), 34.

²⁰ Nincic, “The Logic of Positive Enragement: Dealing with Renegade Regimes,” 339.

²¹ Richard N. Haass and Meghan L. O’Sullivan, *Honey and Vinegar* (Brookings Institute Press: Washington, D.C., 2000), 162.

(economic or strategically) also make good candidates for incentives.²² Haas and Sullivan are less optimistic than Nincic regarding the application of incentives toward policy goals. They argue that although engagement strategies may be applied to a wide range of situations, they are best used for modest and not ambitious goals.²³

Other authors make caveats or place conditions on the proper use of incentives, which puts them into the category of mixed strategists. Authors, such as Alexander George, argue that a strategy that uses both rewards and punishments is the best way to achieve foreign policy goals, especially from “outlaw” states.²⁴ The thought is that by attacking both sides of another states’ expected utility of a certain action (both increase payoff for compliance through incentives and decrease the utility of defiance through sanctions), it is more likely to achieve the desired result. Drezner argued that sanctions have a potentially synergistic effect when used with positive incentives, but that sanctions have a low chance of success when used versus an adversary.²⁵ Bernauer and Ruloff argue that asymmetries of preferences and capabilities are necessary preconditions for incentives to work between two parties.²⁶ Dorussen also focuses on incentives in a two-party bargaining situation. He argues that incentives are more effective in a bargaining situation than sanctions, especially when the two parties involved are future oriented. He implies that outside of a bargaining situation, another strategy may be more applicable. Like Drezner, though, he argues that differences in capabilities make incentives possible in a two-party negotiation.²⁷ Long noted that incentives work on two levels by increasing the base of political support in the target country over time, while also encouraging national level cooperation. Conversely, sanctions may polarize two states in conflict and induce a “rally around the flag” effect. He also notes that it is important to consider those who may benefit economically from the offered incentives, so that the incentives do not

²² Haass and Sullivan, *Honey and Vinegar*, 162, 164.

²³ *Ibid.*, 167.

²⁴ Nincic, 322, in reference to Alexander George’s work in 1993, Ch. 4.

²⁵ Han Dorussen, “Mixing Carrots with Sticks: Evaluating the Effectiveness of Positive Incentives,” *Journal of Peace Research* 38, no. 2 (March 2001): 259.

²⁶ Bernauer and Ruloff, *The Politics of Positive Incentives in Arms*, 16–17.

²⁷ Dorussen, “Mixing Carrots with Sticks: Evaluating the Effectiveness of Positive Incentives,” 260.

cause opposition from political entities that do not benefit from the incentives.²⁸ Although fairly optimistic, Long argues that an existing trading relationship and a minimum degree of trust are prerequisites for the success of an incentive strategy.²⁹ Long states, that because of these preconditions, incentives may be inappropriate for weak states, revolutionary states, or nonstate actors, which is the opposite of what incentive optimists, such as Nincic, and Haas and Sullivan, argue. Long also argues that incentives are not useful for punishment, short-term prevention, or a demonstration of resolve. In these cases, sanctions are better.³⁰

Most authors would argue that incentives pose both advantages and disadvantages. Bernauer and Ruloff summarized these well. Figure 1 lists common advantages and disadvantages of positive incentives from Bernauer and Ruloff.

²⁸ Long, "Trade and Technology Incentives and Bilateral Cooperation," 77–83.

²⁹ *Ibid.*, 98–101.

³⁰ *Ibid.*, 103.

Advantages	Disadvantages
Can cause short to medium term behavior change	Extortion
When capacity is low, can foster longer term solutions to problems	Moral Hazard
Causes less negative reaction in target state on matters of principle than sanctions	Information Problems
Do not require as clear of standards of compliance as threats	Distribution Problems
Motivates countries to provide information about their past, present, and future behavior	Monitoring and Enforcement Problems
	Reluctance to reward bad behavior in sending country
	Irrationality in recipient country
	Absence or weakness of internationally oriented group in recipient country
	Burden and benefit sharing problem on recipient and provider side

Figure 1. Advantages and Disadvantages of Positive Incentives.³¹

Clearly, incentive strategies are not without pitfalls, and even the way they are offered could have a significant effect on their success or failure. In 1975, Knor revealed, “sanctions are costly to the sender before an agreement is reached [whereas] incentives require a costly investment and represent the sender costs of an agreement.”³² Knor demonstrates that incentives attach a dollar value to a desired outcome, signaling how important it is to the sender of the incentives. Many other authors have also intently studied characteristics of incentives. The following list summarizes the general consensus in literature about characteristics of incentives that lead to success. Incentives should do the following.

³¹ Bernauer and Ruloff, *The Politics of Positive Incentives in Arms Control*, 34.

³² Dorussen, “Mixing Carrots with Sticks: Evaluating the Effectiveness of Positive Incentives,” 257, in reference to Knor’s 1975 work.

- Be sufficiently valuable to the target state to generate the desired behavior³³
- Be affordable by the sender³⁴
- Be distinguishable from sanctions,³⁵ and not viewed as threatening to the target state³⁶
- Have sufficient domestic political support³⁷
- Be implemented with clear objectives and verifiable phases³⁸
- Have less linkage the more complicated the relationship³⁹
- Be coordinated with allies⁴⁰
- Have the institutional capacity (from the sender) to be properly implemented⁴¹
- Be focused on stakeholders in target state that benefit from incentive and can influence the target state's government decisions⁴²

Although much has been written about incentives, the literature is not without some significant gaps in knowledge. Little is written to explain how to assess whether incentive offers were too high. Usually an offer of incentives that is too low is obvious, due to rejection of the agreement by the target state. Also, almost no literature exists on the effects of incentives in complex relationships. Incentive literature focuses almost exclusively on bilateral relationships. A framework has not yet been developed that would allow a third party to place incentives where they are most likely to achieve the desired policy objective.

³³ Dorussen, "Mixing Carrots with Sticks: Evaluating the Effectiveness of Positive Incentives," 260.

³⁴ Ibid.

³⁵ Ibid.

³⁶ Long, "Trade and Technology Incentives and Bilateral Cooperation," 101.

³⁷ Haas and Sullivan, *Honey and Vinegar*, 166.

³⁸ Ibid.

³⁹ Ibid., 176.

⁴⁰ Ibid.

⁴¹ Long, "Trade and Technology Incentives and Bilateral Cooperation," 101.

⁴² Ibid.

In summary, it has been relatively easy for the United States to rely on a wide array of powerful disincentives (or, sticks) in the past, but the fact is that they have not always been very successful.⁴³ North Korea, Cuba, Iran, Syria, and Iraq all stood defiant in the face of the United States' (and international community's) most severe sanctions and threats. Recently, as highlighted by the announcement regarding the U.S.' foreign policy toward Sudan, incentives have been reinvigorated. Current knowledge about incentives supports this reorientation of foreign policy strategy, yet many pitfalls remain that must be recognized and avoided. Current literature does a reasonable job explaining how successful incentives are best crafted, but there is still much debate about how to use them most effectively. One area of literature that is still underdeveloped is how to best use incentives from a third party view to achieve a desired foreign policy outcome.

C. PURPOSE OF THIS PAPER

Policy makers must make tough decisions regarding when and to whom to offer positive incentives, yet the literature surrounding how much incentive to offer and whether incentives can achieve the desired policy effect (*ex ante*) from a third party viewpoint is still thin. As the United States is called upon to answer crises, such as the one in Sudan, it is as important now as ever to develop a framework for analyzing the best use of incentives *ex ante*. In general, it is usually easy to determine whether incentives achieved the desired policy objective after the fact (North Korea may be one glaring exception). However, *ex ante*, it is much more difficult to predict the effect of incentives. An analysis tool is needed that can help policy makers properly frame incentives from a third party point of view. This is not to say that *ex ante* analysis is easy. It is not, as information is often incomplete. However, within a clear framework, it is easier to determine what questions to ask and what information is needed to place incentives appropriately. This thesis does not seek to debate whether incentives are useful or not. For the purposes of this thesis, it is assumed that incentives are at least a viable policy option, but also consider that incentives are not always the right option. Furthermore, this work is not a continuation of the debate surrounding what leads to an

⁴³ Nincic, "The Logic of Positive Enragement: Dealing with Renegade Regimes," 323.

effective incentive but assumes that those crafting incentives do so in the best way possible to minimize their drawbacks and maximize their effect. It also is not focused on the use of incentives in a two-way negotiation or bargaining. In a two-way bargaining situation, incentives have a different effect than when offered by a third party. Rather, the purpose of this thesis is to develop a framework to aid policy makers in choosing how best to use incentives from a third party view. The cognitive bargaining model developed within this thesis is one attempt at a solution. The cognitive bargaining model is developed by first reviewing the concepts and assumptions of Fearon's model of bargaining and war and then, Berejikian's thoughts on prospect theory are incorporated. The model is tested by analyzing Ukraine's bargain with Russia in 1992 and comparing it to the bargain reached in 1994. Within the Ukraine case study, the effect of third party positive incentives on the bargaining outcome are considered. It was found that the cognitive bargaining model shows larger than necessary incentives were used with Ukraine in 1992. These incentives contributed to a shift in status quo perception. Subsequently, Ukraine increased its demands. In 1994, the incentives offered by the United States were crucial to the bargain between both Russia and Ukraine. However, lesser incentives may have worked if the predictions of the cognitive bargaining model were considered during the 1992 bargain. This thesis concludes by discussing the limitation of the cognitive bargaining model, as well as the need for further testing and validation. However, due to the promising results from the case of Ukraine's denuclearization, policy makers could use a cognitive bargaining framework to place incentives where it is possible to achieve the most "bang for the buck."

II. THE COGNITIVE BARGAINING MODEL

Where is the best place to start construction of a model that can help analyze where to insert third party incentives? Logically, before tackling third party effects, a framework that sufficiently models the interaction of two parties is essential. Such a model must be accurate enough for two party interactions, yet flexible enough to handle third party influences. It is also important to include the possibility that swaying one side or the other toward a third party preference may actually lead to increased instability or even war. Therefore, some way to bookend or account for the limits of third party effects is crucial. Logically, this limit is the outbreak of war, but assuming that the third party incentives are not offered with the goal of inducing war. To achieve a model that accounts for these important characteristics, this chapter starts by reviewing bargaining literature for a way to model two party conflicts. Then, it discusses the reasoning and logic behind choosing Fearon's bargaining and war model as the basis for a cognitive bargaining model. Using Fearon's model to bookend the bargaining range, prospect theory is then incorporated as a way to account for how third parties can influence the outcome of a conflict between two states. This chapter concludes by explaining the key variables of the Cognitive Bargaining model and discusses the theoretical implications of this model on analysis of third party incentives.

To begin with, many authors use bargaining models as a framework for the interactions between two states in conflict. This is especially popular with game theorists. In fact, several game theories are based on mathematical bargaining models. Bargaining models have evolved considerably over the past few decades. Some leading bargaining model authors are John Nash, Thomas Schelling, Bueno de Mesquita, Frank Zagare and D. Marc Kilgour, and James Fearon.

One of the earlier theorists to discuss bargaining outcomes was John Nash. Nash provided a big breakthrough in bargaining and game theory in 1950 by constructing a mathematical model that results in an equilibrium outcome of bargaining, commonly

called the “Nash Equilibrium.”⁴⁴ Nash assumes that both bargainers expect to gain, and that they both attempt to maximize their expected utility within a given bargaining situation.⁴⁵ Nash assumes, however, that there is a perfect information exchange between the two parties, and that each side understands perfectly what the other side prefers. When uncertainty is input into Nash’s model, the result is an increase in risk-averse behavior.⁴⁶ However, because there is rarely complete information in real world bargaining, optimal outcomes (such as Nash equilibriums) rarely occur. This lack of accurate information also provides an incentive for negotiators to manipulate the information to achieve a more favorable bargain.⁴⁷ Robert Powell argues that bargainers are often unable to commit to agreements and even have incentives to renege because of imperfect information.⁴⁸ Ariel Rubenstein critiqued Nash for the same reason, although Rubenstein used Nash’s model to construct a bargaining model that accounts for multiple back and forth offers before settling into an agreement.⁴⁹ Although Nash’s model does a good job of quantifying outcomes of a specific bargaining situation, it is essential to account for imperfect information exchange to be able to model real world bargaining situations. For this reason, Nash’s theory is not used as a basis for this thesis’s cognitive bargaining model.

In contrast to Nash, Schelling, in *Strategy of Conflict*, takes a more holistic approach to bargaining. He proposes that two parties in conflict usually settle onto key focus points, which drive the negotiating dialogue. A successful bargain occurs as the

⁴⁴ Matthew O. Jackson and Simon Wilkie, “Endogenous Games and Mechanisms: Side Payments among Players,” *The Review of Economic Studies* 72, no. 2 (April 2005): 544, 548–565, discussing Nash equilibrium outcomes.

⁴⁵ Michael D. Kanner, “Framing and the Role of the Second Actor: An Application of Prospect Theory to Bargaining,” *Political Psychology* 25, no. 2, (April 2004): 215, in reference to Nash’s 1950 work on bargaining models and game theory.

⁴⁶ Ibid.

⁴⁷ Ibid., 216–217.

⁴⁸ Robert Powell, “War as a Commitment Problem,” *International Organization* 60 (Winter 2006): 321.

⁴⁹ Kanner, “Framing and the Role of the Second Actor: An Application of Prospect Theory to Bargaining,” 216, in reference to Ariel Rubinstein, “Perfect Equilibrium in a Bargaining Model,” *Econometrica* 50, no. 1 (January 1982).

expectations of the two parties in conflict converge.⁵⁰ Schelling approaches bargaining from almost the entirely opposite direction as Nash. He focuses on imperfect information, and the problem of how to create credible to coerce the other side in a deterrence situation. Schelling introduces the idea of using a bargaining strategy as a way to influence the outcome of a bargaining situation. He argues that by limiting the options, and leaving the options of the other side wide open, it makes the threat more credible. Since a bargain is still preferable to war, the other side likely chooses a settlement. Schelling is mainly focused on making threats credible in a deterrence bargaining scenario, where one must create bargaining power. He does introduce non zero-sum strategies, to include a cooperative strategy. However, because Schelling's theory is more holistically focused on deterrence strategy and making credible threats, it lacks enough breadth to consider incentive effects and lacks enough detail to help predict bargaining outcomes. By forcing a situation to the brink of war to make a threat appear credible, the likelihood of war may actually increase and the chances of a bargain decreases. Therefore, Schelling's concepts are not used for this thesis's cognitive bargaining model.

Bueno de Mesquita's theory is more predictive than Schelling, yet not as steeped in quantifiable outcomes as Nash. Bueno de Mesquita modeled bargaining as a competition. Two states both make an offer. Then, they compete toward a middle ground solution that still maximizes their expected utility. As more information and further proposals are exchanged, the outcome trends toward a middle ground.⁵¹ This is similar to Nash who predicts a settling effect during bargaining toward a middle ground. The advantage of Bueno de Mesquita's model is that by determining the initial offers of both sides, the likelihood of a bargaining outcome may be modeled ex ante. He does account for the back and forth that often occurs during bargaining, which is an attractive feature. However, the weakness of Bueno de Mesquita's model is that ex ante, it simply predicts that the bargaining outcome can end up near the midpoint of the two initial offers, all

⁵⁰ Spangler, *Force and Accommodation in World Politics* 126–127, quoting Thomas C. Schelling, *The Strategy of Conflict* (Harvard University Press, 1960), 21–40.

⁵¹ Kanner, "Framing and the Role of the Second Actor: An Application of Prospect Theory to Bargaining," 216, in reference to Bueno de Mesquita, *Principles of International Politics: People's Power, Preferences, and Perceptions*, 2nd ed. (Washington, D.C.: Congressional Quarterly Press, 2003).

other factors being equal. Two factors that Bueno de Mesquita thinks may sway the outcome from the midpoint are behavior patterns and perceptions of the states in conflict. Specifically, behavior patterns show that states are more likely to agree to a known offer within their acceptable bargain region, rather than continue the uncertain bargaining process in the hope of further maximizing their expected utility.⁵² In other words, states often choose a known outcome, rather than continue in uncertainty. He also makes a convincing case that perceptions, rather than the structure of the international system, more accurately predict the likelihood of war through an empirical analysis of wars from 1816–1970.⁵³ In general, Bueno de Mesquita's work offers three important contributions to the analysis of bargaining. First, perceptions are a better indicator of the likelihood of war than structure of the international system. Second, it is possible to include perceptions within theoretical frameworks. Finally, expected utility is influenced by the perception of the states in conflict. Although Bueno de Mesquita's model was heavily considered for this thesis, it was not chosen. It is not flexible enough to account for both a bargain offer that results in war, as well as how third party incentives may influence the outcome.

Zagare and Kilgour's model is intriguing because it includes the effect of a third party. Their model classifies the three parties into a challenger, a protégé, and a defender. They put these three parties into a deterrence situation, and focused on the effect the third party alliance behavior has on deterrence success. The independent variable is with whom the third party chooses to align. However, their model is not detailed enough to account for three-way bargaining. The model does not consider the other means that a third party may have available (besides alignment) to influence an outcome.⁵⁴ Although Zagare and Kilgour's analysis of third parties is useful for deterrence purposes, the one-dimensional focus on alignment limits its usefulness for predicting bargaining outcomes. Therefore, it is not chosen for the basis for the cognitive bargaining model.

⁵² Woosang Kim and Bruce Bueno de Mesquita, "How Perceptions Influence the Risk of War," *International Studies Quarterly* 39, no. 1 (March 1995): 52–63.

⁵³ *Ibid.*, 62–63.

⁵⁴ Frank C. Zagare and D. Marc Kilgour, "Alignment Patterns, Crisis Bargaining, and Extended Deterrence: A Game-Theoretic Analysis," *International Studies Quarterly* 47, no. 4 (December 2003): 607.

James Fearon proposed a model of bargaining and war in 1995 that is grounded in rational choice theory. Fearon argues that there is always a bargaining range if war is costly and actors are risk neutral or risk averse. Fearon assumes that two states are in competition, states are unitary rational actors, they seek to maximize security, and their behavior is determined by the distribution of power in the system. Fearon's theory is grounded in rational choice, and he contends only three reasons exist why wars occur: indivisibility of goods, inability to commit to bargains, or private information and incentives to misrepresent. Fearon's bargaining range is defined by the probability of victory in war minus the costs of war for the first state, and plus the costs of war for the second state. Figure 1 depicts Fearon's model. Outside of the bargaining range, either state A or state B should favor war to a negotiated settlement.⁵⁵

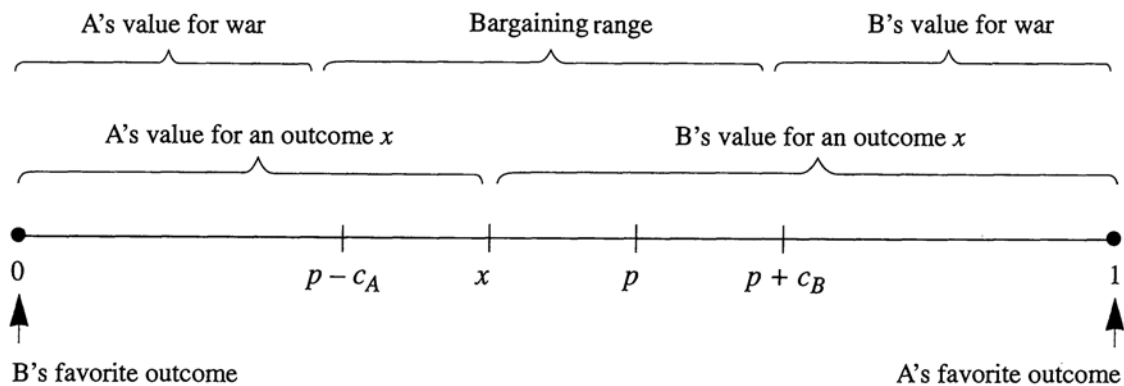


Figure 2. Fearon's Bargaining and War Model.⁵⁶

One of the weaknesses of Fearon's model is that even though it assumes a unitary rational actor, it requires one to go inside the black boxes of the states to apply it to the real world. How else is it possible to learn state A and B's favorite outcome? Although Fearon proposes a rational choice model, he implies that the perceptions (i.e., avored outcomes) within each state are important. Fearon's model also does not account for how different actors value different components of the favored outcomes. For example, state A may have little interest in keeping nuclear weapons, yet state B may have a very high

⁵⁵ James D. Fearon, "Rationalist Explanations for War," *International Organization* 49, no. 3 (Summer 1995): 379–414.

⁵⁶ *Ibid.*, 387.

interest in obtaining them. Also, real bargaining goes back and forth between states over a period of time. Each side learns about the commitment of the other side during each of the interactions. Fearon's model is fixed at one point in time, and does not model bargaining processes that have several back and forth exchanges that occur over a period of time.

Despite these limitations, Fearon's bargaining and war model is a good starting point for the cognitive bargaining model proposed in this thesis for three reasons. First, it defines the limits of the analysis of incentives. Fearon's model shows that an offer outside the acceptable range may result in war. This intellectually constrains subsequent analysis of incentives by limiting their effects to that less than war. Second, it defines how wide the bargaining range is, by analyzing the costs of war versus the expected utility of war victory. By defining the width of the bargaining range, it is possible to see how much room there might be for incentives to play a role in the outcome. Third, since Fearon uses expected utility in relation to favored outcomes, the model has the potential to predict where within the bargaining range an offer may fall. Fearon's model is chosen as the base for the model because it frames the bargaining range, determines how much bargaining space is available, and has the potential for further fidelity regarding bargaining offers.

While Fearon's model is a good starting point for delving inside the bargaining range for further analysis, it does not accurately predict outcomes within the bargaining range. The dependent variable is simply the outcome of war, and more is required. The model should predict where within the bargaining range a bargaining agreement might lie. Thus, it is necessary to delve inside the unitary rational actor assumption. An additional conceptual tool must help understand each side's commitment to their favored outcomes. Adding more depth does not come freely. The relative parsimoniousness of Fearon's bargaining and war theory is intentionally sacrificed for this increased fidelity. However, this is needed to develop a tool that predicts the effect of third party incentives. To do this, it is crucial to deepen the analysis of the perceptions of the two states. Hoffman argues that, "perceptions are more than a part of political reality: they mold it,

insofar as they are the springs and fuel of action.”⁵⁷ What the model needs is a way to predict behavior of two states within the bargaining range more accurately based on their perceptions.

One theory that has potential to provide further insight is prospect theory. Daniel Kahneman and Amos Tversky introduced prospect theory in 1979.⁵⁸ Their theory of decision making was developed using empirical tests of humans given the choice between several decisions that had the same expected utility. They found that people do not make decisions using a purely linear expected utility function, but instead are influenced by their perception of their decision as a gain or loss. Berejikian was one of the first to apply prospect theory to state decision making in 2002, although Levy also laid some of the groundwork in the 1990s.⁵⁹ Berejikian only focused on the application of prospect theory to deterrence.⁶⁰ Since deterrence is one form of influence strategy, could prospect theory apply to other influence strategies as well? In essence, Berejikian argued that states may be unitary actors, but they are not rational. He argues that state choices depart from rational choice through application of prospect theory. In other words, seemingly irrational state behavior is explainable through the cognitive lens of prospect theory. Berejikian explains that state behavior in deterrence varies based on how a situation is framed. If a situation is framed as a gain, most people are risk averse and settle for a sure small gain, instead of risking it all to obtain a larger gain. This situation is what is called a gains frame. If instead the situation is framed as a loss, then most people are risk acceptant. This is a losses frame.⁶¹ Prospect theory’s subjective utility is a

⁵⁷ Christine A. Kelleher and Susan Webb Yackee, “Who’s Whispering in Your Ear? The Influence of Third Parties over State Agency Decisions,” *Political Research Quarterly* 59, no. 4 (December 2006): 631.

⁵⁸ Jack Levy, “Introduction to Prospect Theory,” *Political Psychology* 13, no. 2, Special Issue: Prospect Theory and Political Psychology (June 1992): 171–186.

⁵⁹ Jack Levy, “Loss Aversion, Framing, and Bargaining: The Implications of Prospect Theory for International Conflict,” *International Political Science Review* 17, no. 2, Crisis, Conflict and War (April 1996): 179–195; Levy, “Introduction to Prospect Theory,” 171–186.

⁶⁰ Jeffrey D. Berejikian, “A Cognitive Theory of Deterrence,” *Journal of Peace Research* 39, no. 2, (2002): 165–181.

⁶¹ *Ibid.*, 165–168.

leading alternative to the rational choice theorists expected utility. Shown graphically in Figure 3, subjective utility shows how actors' perceived value differs based on whether a situation is framed as a gain or as a loss in relation to the status quo.

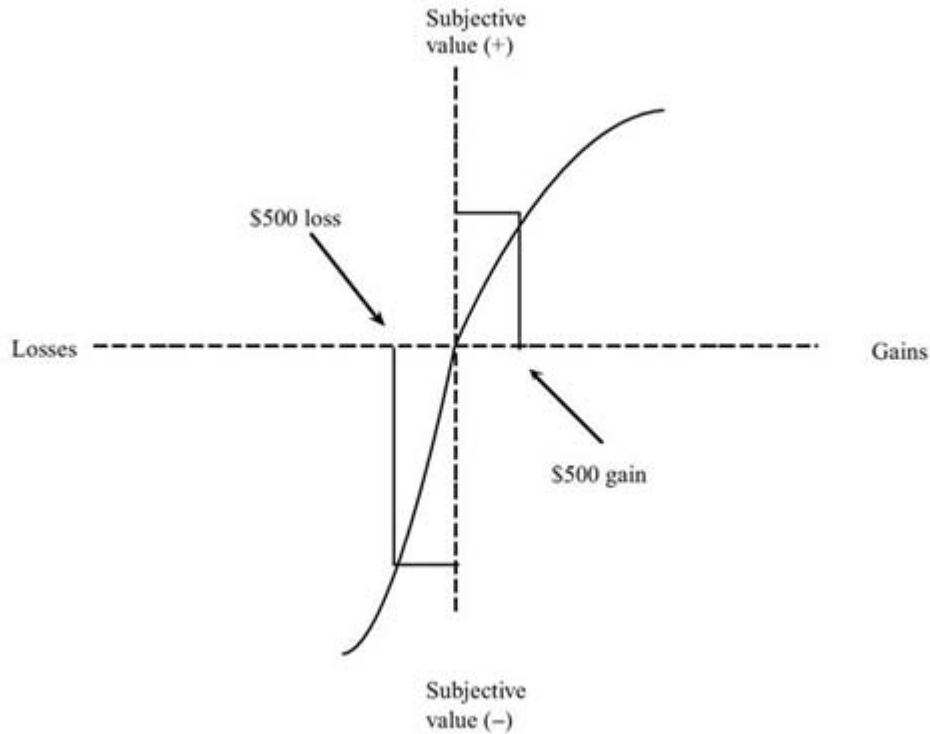


Figure 3. Subjective Utility Function⁶²

A. MIXING APPLES AND ORANGES?

Is it possible to use a rational choice model, such as Fearon's bargaining and war model, and combine it with an irrational cognitive approach? Berejikian argues that it can be done. He says that a "blend of rational and cognitive models will provide scholars with a [more] comprehensive understanding ..."⁶³ The cognitive bargaining model in this thesis is an attempt at what Berejikian suggests is possible, although it is not the first such endeavor.

⁶² Berejikian, "A Cognitive Theory of Deterrence," 171.

⁶³ Ibid., 167.

Michael Kanner constructed a theory of bargaining that incorporates prospect theory in a Political Psychology article written in 2004.⁶⁴ Kanner applied prospect theory to a two party bargaining situation. He uses prospect theory's framing effect to explain how a weaker state can gain a more favorable bargain over a stronger state. Kanner suggests that an actor can manipulate the information exchange in bargaining.⁶⁵ Kanner says that, "when preferences are unknown, actors are likely to choose deception/manipulation."⁶⁶ An actor creates an asymmetric information exchange by withholding, "information about their strategies and preferences."⁶⁷ Kanner says that by "changing the beliefs of the stronger state about the value and probability of future events, the weaker state can create a more favorable outcome."⁶⁸ The Melian dialogue is a classic example of what Kanner describes. The Melians argued that destruction would not be a gain to Athens, but a loss. Athens would gain more through a treaty than conquest. Although the Melians failed in convincing the Athenians, the dialogue is instructive for how to try to change the beliefs of a stronger state.⁶⁹ Even though Kanner does not consider a third party within the bargaining situation, it is logical that a third party could also influence the beliefs of the actors. The biggest shortfall of Kanner's approach, for the purposes of this thesis, is that it only focuses on the actions of the weaker side. It does not overlay both sides' perceived utility. To model third party effects, it is necessary to consider the perceived utility of both sides when placing incentives. Kanner also does not account for a shift in the reference point (*status quo*), which is important once discussing third party incentives. Kanner neglects the possibility of war. Consider that each side in bargaining can accept, reject, counter-offer, or fight when an offer is on the table. Although ignoring the option of fighting may make theory

⁶⁴ Kanner, "Framing and the Role of the Second Actor: An Application of Prospect Theory to Bargaining," 213.

⁶⁵ *Ibid.*, 216.

⁶⁶ *Ibid.*

⁶⁷ *Ibid.*

⁶⁸ *Ibid.*, 214.

⁶⁹ Thucydides, *History of the Peloponnesian War*, Chapter XVII, "Sixteenth Year of the War—The Melian Conference—Fate of Melos," 431 BC.

development easier, neglecting the war option opens the door to an unended analysis of incentives. While Kanner proposes one way to incorporate prospect theory into a rational choice model, it is not the right fit for analyzing the effects of third party incentives.

B. MODEL CONSTRUCTION

This thesis develops a fresh approach for incorporating prospect theory into bargaining. While Kanner paved the way for applying prospect theory to bargaining, the model must include the preferences of both sides in conflict. To accomplish this goal, start by explaining the underlying assumptions. Then, the independent variables are defined, starting with Fearon's bargaining and war model as the basis. Fearon's independent variables are (for each state): favored outcome, expected utility (Eu) of winning war, the probability of war victory (p), and the proposed bargain (x). The perceived status quo of each state (SQ) is added to these independent variables, and the expected utility calculation to perceived utility (Pu) is modified. The additional independent variables make it possible to incorporate prospect theory so as to predict bargaining outcomes. Lastly, how the additional independent variables change the dependent variable from simply predicting war outbreak to predicting bargaining results are discussed. Figure 4 shows the differences between the cognitive bargaining model and Fearon's original bargaining and war model.

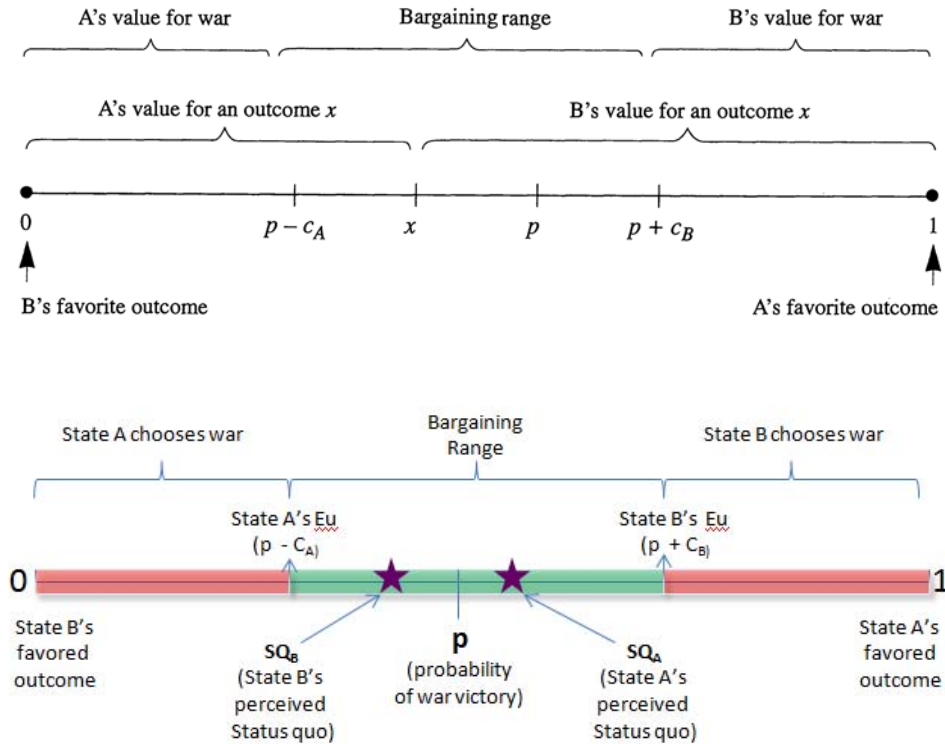


Figure 4. Fearon's Model vs. The Cognitive Bargaining Model

1. Assumptions

The first assumptions that must be addressed are those made by Fearon in his rational choice model of bargaining and war. For the model used in this thesis, it is still assumed that states seek to maximize their security. However, the states in this model are removed from the influence of the distribution of power in the international system, and thus, making it possible to isolate the bargaining range to analyze third party effects. International pressure is may still be accounted for in the perception of status quo by the two states, but distribution of power in the international system is assumed negligible. It is also necessary to challenge the unitary rational actor assumption. Assume that states are unitary actors, but this analysis cannot be limited by a rational assumption if incorporating prospect theory. To do so is a clear contradiction. Instead, the cognitive bargaining model assumes that decision-making is more influenced by the perception of the facts, than the facts themselves. This is absolutely critical for developing a predictive theory of decision making. Ex post analysis of what might have been the correct decision

to a bargaining problem is useful for developing lessons learned, but not for developing ex ante decision-making tools. Gary Schaub says, “what is more important to decision makers is the ex ante perception of available options and the perceived utility of those options.”⁷⁰ The reality of bargaining is that actors rarely have perfect information about each other’s capabilities and intentions when decisions must be made. Therefore, the perception of limited information available is more important than an expected utility based on facts alone.

For the remaining assumptions of this cognitive bargaining model, assume there are two primary states in conflict with a third party that is not already committed to one side or the other. Also assume the two states in conflict have the capability to either cooperate or not cooperate with each other. Another assumption is that they are engaged in a conflict where each side’s favored outcome differs from the other, and the outcome may include the possibility of war. An additional assumption is that the third party is relatively unaffected by the two states in conflict, is capable of establishing a minimum level of trusting relationship with both sides, and has the capability to offer positive incentives to either side.⁷¹ Figure 5 summarizes the assumptions for the cognitive bargaining model:

⁷⁰ Gary Schaub, “Deterrence, Compellance, and Prospect Theory,” *Political Psychology* 25, no. 3, Special Issue (Part Two): Prospect Theory (June 2004): 398.

⁷¹ Long, “Trade and Technology Incentives and Bilateral Cooperation,” 98, 101.

1. International structure is not considered
2. Two states are in conflict, and the outcome could include war
3. States seek to maximize their security, as well as achieve the best bargain possible.
4. States are unitary, but not rational. State decision making follows the predictions of prospect theory where perceptions of the decision makers affect their behavior.
5. The third party has a minimum level of trust, dialogue, and resources to offer incentives
6. Incentives are not offered for the purpose of starting war

Figure 5. Cognitive Bargaining Model Assumptions

2. Independent Variables

The independent variables derived from Fearon's bargaining and war theory are the probability of war victory (p), the expected utility of war (Eu), favored outcomes, and the proposed bargain (x). Fearon's article, "Rationalist Explanations for War," references more detailed descriptions of these variables.⁷² This section focuses on the differences between Fearon's variables and the cognitive bargaining model variables. The two largest differences for the independent variables are the addition of the perception of status quo and the subtle change from expected utility into perceived (or subjective) utility.

Perception of the status quo is the key to predicting a bargaining outcome. Nash argued that states would rarely accept a bargain that does not at least maintain the status quo.⁷³ Schaub highlighted that defining the status quo is often difficult, and that the status quo tends to have its own inertia. In other words, states have to be motivated to stray from where they perceive the status quo.⁷⁴ This is important to consider when looking at the effects of third parties in bargaining situations. Berejikian's proposes a methodology for coding status quo. He argues that changes in a "state's strategic condition" may be

⁷² Fearon, "Rationalist Explanations for War," 379–414.

⁷³ Kanner, "Framing and the Role of the Second Actor: An Application of Prospect Theory to Bargaining," 215.

⁷⁴ Schaub, "Deterrence, Compellance, and Prospect Theory," 397.

used as a proxy for the state's perception of their status quo condition.⁷⁵ This method is used, when available. For the model used in this thesis, the perception of status quo is twofold, the perception of Status Quo by state A (SQ_A) and perception of Status Quo by state B (SQ_B). If a state perceives that a proposed bargain is a loss (in relation to the status quo), then prospect theory says the state opposes that bargain more aggressively than if they perceive it as simply a lesser gain.⁷⁶ By coding the perception of status quo along the range of a favored outcome, the understanding of the bargaining situation is advanced. Unlike authors that make assumption about risk acceptance of states, or those that assume that bargaining must result in a gain, the cognitive bargaining model classifies a bargaining situation as win-win, zero sum, or lose-lose. Figures 6, 7, and 8 show how these situations are coded and they depend on where the perception of status quo lies in relation to the favored outcomes.

⁷⁵ Berejikian, "A Cognitive Theory of Deterrence," 173.

⁷⁶ *Ibid.*, 181.

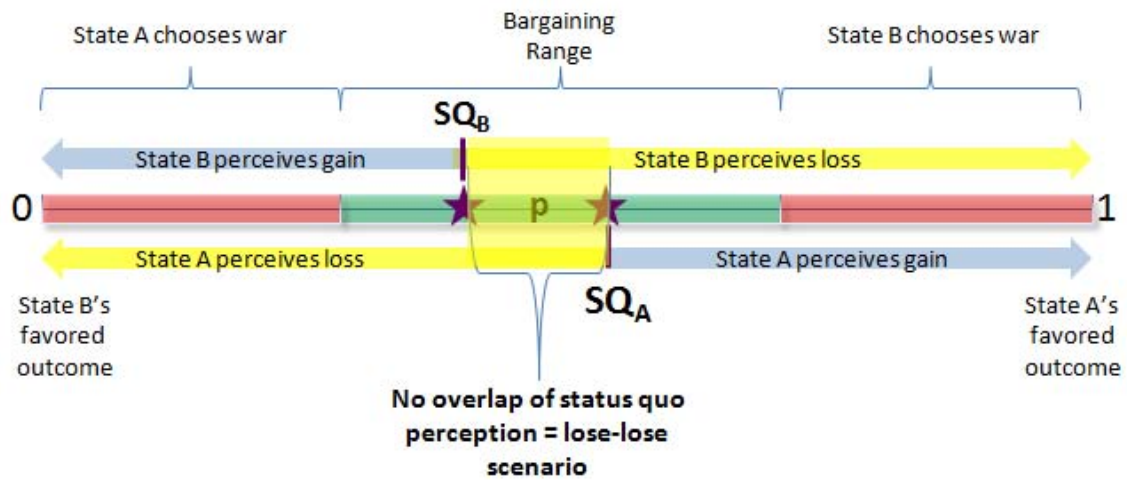


Figure 6. Lose-Lose Scenario (Negative Sum Game).

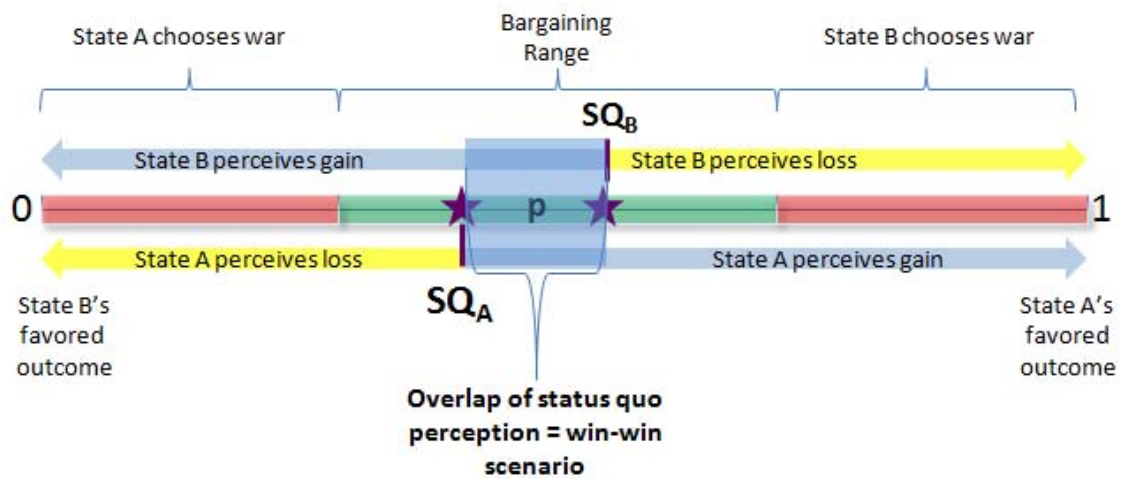


Figure 7. Win-Win Scenario (Positive Sum Game).

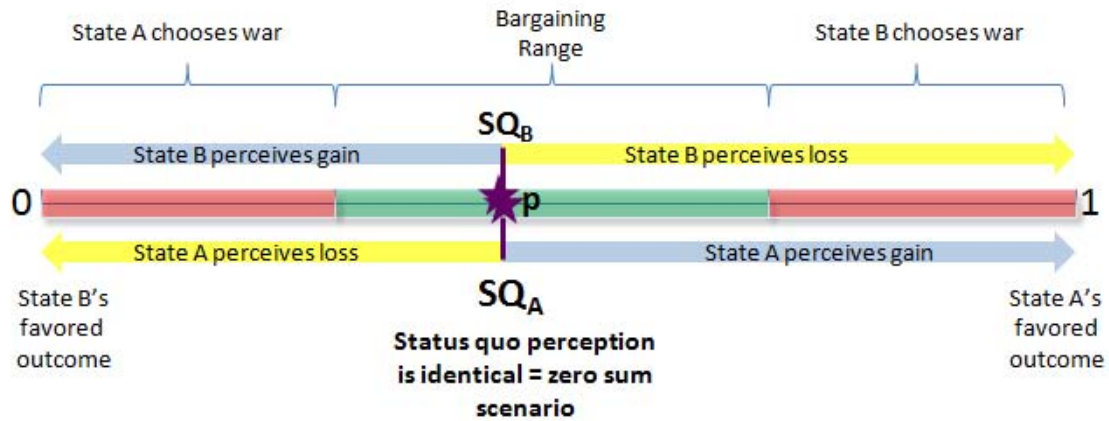


Figure 8. No-Win/Lose (Zero Sum Game).

Overlaying the perceived status quo on Fearon's model of bargaining and war makes it possible to draw several additional insights. First, a win-lose situation is possible in almost any scenario, depending on where the bargaining offer lies along the horizontal axis. However, it may force one state or the other into a choice of war. Therefore, why would one state be willing to accept a loss? This could occur when one state exerts coercive diplomacy over the other state, yet the state under pressure still sees the proposed bargain as preferable to war. It is interesting to note that win-win and lose-lose scenarios only occur when there is a difference in the perceived status quo of the two states. There is one other way to achieve a win-win or lose-lose, but it is not obvious by simply looking at the model. If two states value components of their favored outcomes differently, they could each trade an item they value less for an item they each value more. The key to identifying this possibility is looking for differences between the favored outcomes of the two states. If both favored outcomes are identical (just opposite ends of a point of view), then this other win-win scenario is not possible. Differences in favored outcomes are discussed more during the case study in Chapters IV and V. Bargaining scenarios can be generically classified as one of three possibilities (win-win, lose-lose, or zero sum) by determining perceptions of the status quo by state A and state B.

Up to this point, the model is only one dimensional. How is it possible to expand the model into another dimension? The subjective utility function to set a Y-axis that is

equivalent to a perceived value is used. Starting with the location of the perceived status quo along a range of favored outcomes, the subjective utility function, as shown in Figure 3, is overlaid. The function runs in opposite directions to show each state's maximum gain as their most favored outcome. For clarity, blue is used as the color of the subjective utility function for state A, while red is the color of the subjective utility function for state B. This helps visualize the relative value of gains and losses as predicted by prospect theory, and translates well into the analysis of third party incentives. The height of the Y-Axis represents the dollar amount required to achieve the corresponding effect along a state's subjective utility curve as shown in Figure 9.

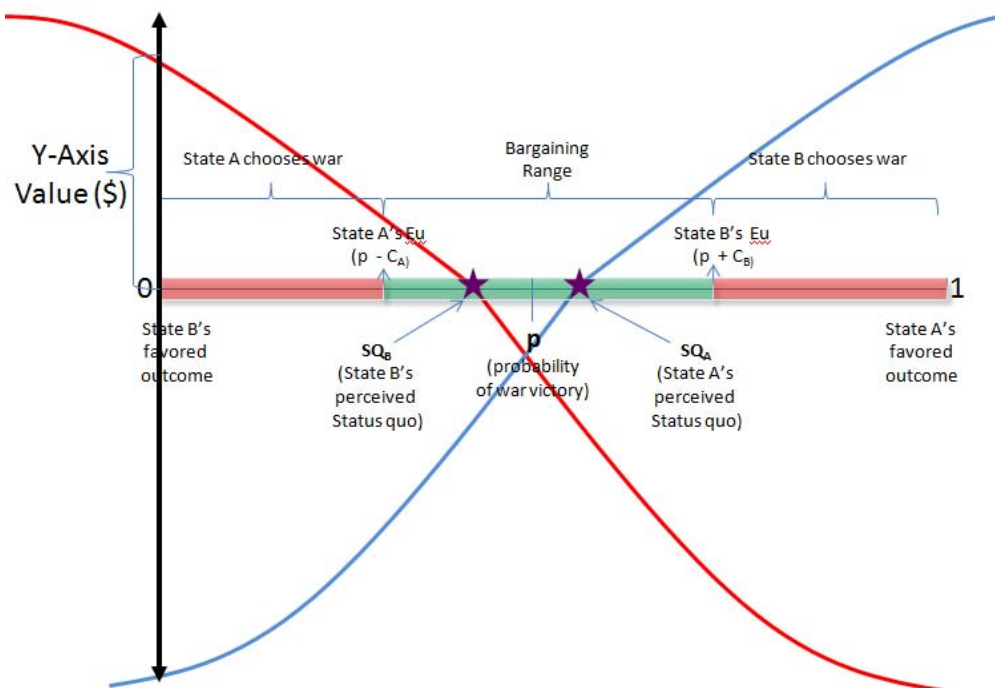


Figure 9. Subjective Utility Functions in the Cognitive Bargaining Model

The inclusion of status quo and the subjective utility lines complete the cognitive bargaining model. They also allow for further inferences about bargaining. First, the most equitable gain for a win-win scenario occurs at the intersection of the two subjective utility lines. Second, in a lose-lose situation, the most equitable distribution of loss also occurs at the intersection of the two subjective utility lines. If everything is equal, these points occur at the halfway point between the two perceived status quos. Remember that

Bueno de Mesquita and Nash's models predicted bargaining agreements generally occur at some midpoint between the two initial offers.⁷⁷ The cognitive bargaining model depends less on the offers and more on where each state perceives the status quo. By classifying the situation as a win-win, neutral, or lose-lose, it is not necessary to limit the analysis to only risk neutral or risk-averse actors. Nash's model, specifically, does not account for negative sum situations. In the cognitive bargaining model, state A is unlikely to propose a bargain that puts it in a losses frame relative to its perceived status quo. In other words, even if a lesser offer would increase security by ensuring a bargain short of war, the perception that it is a decrease from the status quo makes it unlikely that state A makes such an offer. Similarly, state B is unlikely to accept a bargain from state A that falls into the losses frame in relation to their perceived status quo. The cognitive bargaining model predicts that one state uses coercion or inducements, a lose-lose situation is more likely to result in a failure of bargaining than a zero sum or win-win situation.

Incorporating subjective utility is not without drawbacks. There are two very difficult challenges. First, how to determine the slope of the subjective utility functions to predict effects of incentives? Second, how to handle multiple issues within each state's favored outcomes, which may not have the same perceived gain/loss by both sides? For the slope of the lines, for the purposes of this thesis, it is assumed that the slope of each state's subjective utility line is identical. To account for the different perceived values, the location of gain for state A is disaggregated from the location of the perceived loss for state B. The second problem is how to handle multiple components of the favored outcomes. In this case, the issues are grouped into an overall perceived gain or loss, and located along the subjective utility function for each state. This prevents having multiple lines for each part of the favored outcomes, which are too cumbersome for the purposes of this thesis.

Although additional independent variables have been discussed, one more modification to Fearon's rational bargaining and war theory must be made. It is a subtle,

⁷⁷ Kanner, "Framing and the Role of the Second Actor: An Application of Prospect Theory to Bargaining," 215-216.

but very important difference. States calculate the cost of war using perceived utility instead of expected utility. In other words, it is possible that states possess a flawless view of the actual costs and benefits. However, there is usually a level of uncertainty due to imperfect predictions of the states' capabilities, as well as the adversaries' forces. States actually make decisions based on their perception of expected utility. Therefore, the ends of the bargaining range are defined as $p - C_A$ (where C_A is the perceived costs of war for state A) and $p + C_B$ (where C_B is the perceived costs of war for state B). In a perfect world, perceived utility (P_u) and expected utility (E_u) would both be the same. Expected utility is easier to deduce *ex post*. However, to develop a model that has predictive power, it is essential to have a model that accounts for a utility function *ex ante*. Perceived utility by decisions-makers is available *ex ante* through interviews, intelligence, public statements, and signaling actions, although this is sometimes complicated by states that try to misrepresent their position. Understanding where each state perceives its costs for war is key to determining the width of the bargaining range and, for the purposes of this thesis, the limits of the effects of incentives.

3. Dependent Variable

By incorporating the perceived status quo and applying a subjective utility function, the focus shifts off Fearon's dependent variable, the outbreak of war. Instead, while war is still a possibility in the cognitive bargaining model, prospect theory makes it possible to dive farther inside the bargaining range. Three bargaining situations are identified inside the bargaining range: win-win, lose-lose, and zero sum. Also, the dependent variable is changed to the likelihood of an acceptable bargaining agreement. The change to the dependent variable is important for the subsequent analysis of third party incentives. By changing the dependent variable, it allows this model to determine whether a positive incentive is likely to result in an acceptable agreement. This is an especially important feature for a third party that desires a specific, separate policy outcome.

C. THIRD PARTY EFFECTS

Thus, how do incentives fit into the cognitive bargaining framework? In addition, if they fit into the model, does it further insight regarding incentives? The cognitive bargaining model is very well suited for an unbiased analysis of third party incentives because it disaggregates the gains and losses frames of the two states in competition. In doing so, a third party can analyze which state might respond more favorably to an incentive. By breaking down the bargaining situation, the cognitive bargaining model does four things for the analysis of positive incentives. It shows where a positive incentive might have the most “bang for the buck,” demonstrates second order effects of incentives on a perceived status quo, debunks several myths about incentives, and cautions when incentives should not be used.

First, the cognitive bargaining model allows for cost/benefit analysis of incentives by a third party. The model illustrates which side of a conflict might provide the highest total effect from positive incentives. Although the status quo provides a reference point for framing gains and losses of each state, the subjective utility function is not linear. Consider situation A and situation B in Figure 10. Both states value an incentive equally. Also assume that each state has the same reference point, or perception of the status quo. This classifies the examples situations as zero sum. By overlaying the subjective utility functions, the effect of positive incentives may be analyzed. For clarity purposes, state A’s subjective utility function is shown in blue, whereas state B’s subjective utility function is shown in red. The blue and red circles represent where on the subjective utility curve each state perceives the value of a bargaining offer. In each case, the goal of the third party is to maintain the status quo to avoid a potential outbreak of war between states A and B.

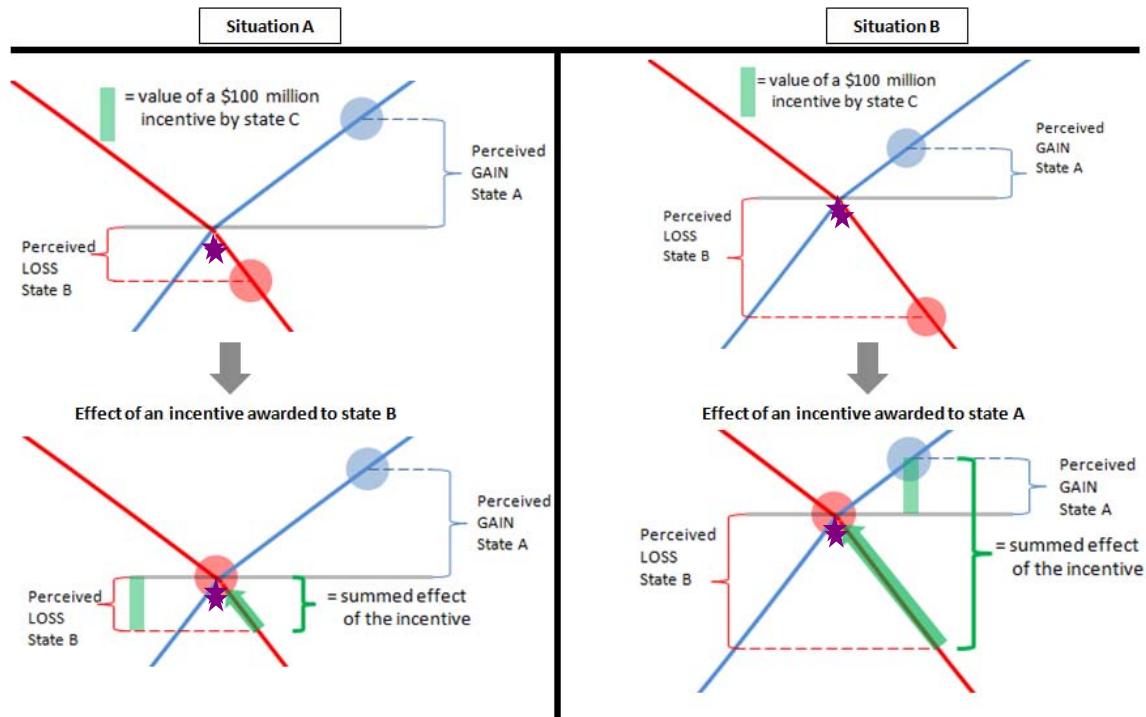


Figure 10. Effects of Third Party Incentives.

In situation A, the third party (state C) has a 100 million-incentive budget. State A has made an offer that would represent a gain toward its most favored outcome. State B, meanwhile, would take a loss if it accepted state A's offer. The third party has the choice whether to offer its incentive to state A to reduce its demand or provide a cushion to state B for taking a loss. The value of the incentive is represented by the height of the vertical green bar in Figure 10. Providing the incentive to state A to reduce its demands probably does not lead to a solution, because it would only be willing partially to reduce its offer by half. This would likely cut state B's loss in half to match the reduction in state A's demands, but state B still ends up in the losses frame. Since state B is still in the losses frame, they probably reject the bargain unless state A (or state C) exerts coercive diplomacy on state B. However, if instead the incentive is offered to state B, who values the incentive as much as its perceived loss, what is the result? In this case, state B accepts the offer by state A because the incentive offsets the loss, effectively moving state B's perception back to their status quo. The incentive compensates state B sufficiently for the loss. Note that state A gains nothing from the incentive offered to state B in this situation.

In situation B, state A makes an offer that state B perceives as a big loss from its status quo. In this case, providing the incentive to state B reduces the loss, but does not move state B back to the status quo. The incentive to state B still results in a failed agreement. However, if the incentive is provided to state A in exchange for giving up their demands, state A still nets a positive gain that is equivalent to their offer. State B is no longer forced into the losses frame, and the status quo is maintained. The total effect of the incentive in this case is multiplied. Not only does it compensate state A for reducing its offer, but it also moves state B back to their perceived status quo. This offsets any requirement to compensate state B for a loss. Situations A and B illustrate that framing positive incentives within the cognitive bargaining model allows for analysis of where they might achieve the greatest “bang for the buck.”

Second, incentives may also have a second order effect on perception of status quo. If incentives become part of the status quo, removing them is equivalent to providing negative incentives or sanctions.⁷⁸ The cognitive bargaining model shows that this moves the target state into the losses frame, where it may become more risk acceptant.⁷⁹ As a caution to those who implement incentives, do not let incentives become part of the perceived “status quo,” unless a long-term commitment is affordable and desirable.

Third, the cognitive bargaining model illuminates some misperceptions of incentives. Foran and Specter argue that incentives are more likely to be successful when the “states involved are friendly, the stronger the motive to proliferate, the more lucrative the incentives...and the lower the sunk costs...”⁸⁰ The first claim is equivalent to saying peaceful states are more likely to resolve things peacefully. However, the cognitive bargaining model shows that even peaceful states reject bargaining agreements that are perceived as a loss from the status quo. For the second claim, motivation may provide insight into the slope of the subjective utility gains/losses lines. However, the cognitive bargaining model discounts motivation as a primary predictor of bargaining outcomes.

⁷⁸ Bernauer and Ruloff, *The Politics of Positive Incentives in Arms*, 42.

⁷⁹ Berejikian, “A Cognitive Theory of Deterrence,” 172.

⁸⁰ Bernauer and Ruloff, *The Politics of Positive Incentives in Arms*, 28.

Instead, incentives are most useful if they adequately compensate a state such that the resulting agreement results in a minimum of the status quo. The third claim, more money leads to a better chance of success, is also a myth. The cognitive bargaining model clearly shows that just because more money is offered does not mean it leads to success. Consider situation B in Figure 10. Even if the incentive was increased from \$100 million to \$150 million, it could still fail. If offered to state B, it is not adequate to cover their perceived loss. Figure 10 illustrates it is more important to offer the incentive to the right party than increase the amount of the incentive. While more money may open options, it is not always the right answer. This same argument applies to the claim regarding sunk costs. Again, the perception of status quo is a more important predictor of bargain settlements than how much money has already been spent. Although the cognitive bargaining model counters some common myths, it should not be viewed as a replacement for previous thought. Authors that define successful types of incentives, structure of incentives, and the durability of incentive arrangements are extremely valuable for those that have to implement incentives. The cognitive bargaining model should be viewed as a complement to these authors' theories. By using the cognitive bargaining model to frame an incentive strategy properly, misapplication of incentives may be avoided.

Fourth, the cognitive bargaining model shows that incentives are not always useful. One of the flaws of literature on incentives is that many focus on proving that incentives are a viable policy tool. In doing so, some authors ignore the security context and succumb to selection bias in their analysis. On the other extreme, some authors argue that incentives are not ever useful. Wagner argues that the "threat of losing a particular unit via sanctions is a more convincing argument than providing additional gain."⁸¹ The cognitive bargaining model shows that the key to whether incentives are useful or not is where states' perceived status quo lies. Positive incentives may not always be appropriate. Consider two more situations (situation C and situation D) as illustrated in Figure 11.

⁸¹ Han Dorussen, "Mixing Carrots with Sticks: Evaluating the Effectiveness of Positive Incentives," *Journal of Peace Research* 38, no. 2 (March 2001): 253.

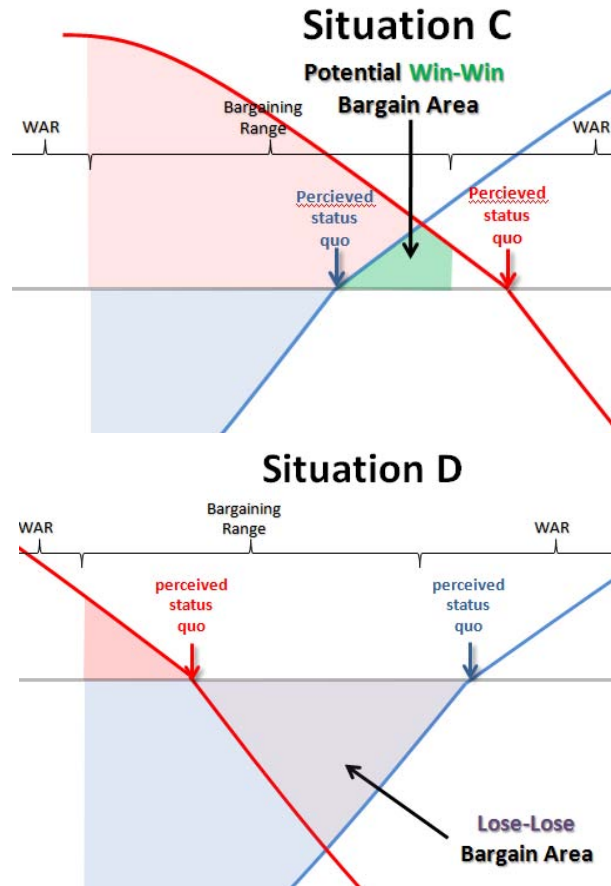


Figure 11. Poor Situations for Incentives.

In situation C, both states perceive a status quo that is more toward their favored outcome. Therefore, there is a potentially large win-win bargain area. A bargain that is favorable to the perceived status quo of both states is a win-win, and is likely to be accepted by both sides. In this case, no positive incentive is required for a successful settlement. Two states could also achieve a win-win if they trade separate bargaining chips, and each state values the bargaining chip they are giving up as less important than the one they are gaining. In either case, if a win-win occurs naturally, then an offer of a positive incentive by a third party only increases the potential for extortion and moral hazard.

In contrast to situation C, situation D shows a situation where neither state is likely to find an acceptable bargain. The status quo perception is so far apart that it would take a huge amount of money to compensate state A or state B adequately for the

perceived loss. In this case, a third party (state C), may not have the means to provide such a large incentive. Unless each state trades a bargaining issue that is less important to it, a negotiated settlement is not likely. In this case, coercive diplomacy may be the only way to move the perception of status quo, along with changing the calculation of the perceived utility/costs for war.

In this section, the cognitive bargaining model demonstrated how it may be used as an analysis tool for incentives. It demonstrated how to choose whom to incentivize, based on the subjective utility gains/losses curves. It also highlighted that if incentives become part of the status quo, they could move a state into the losses frame if removed. This is dangerous, because a state is likely to become more risk acceptant if put into a losses frame. The cognitive bargaining model also exposed some thoughts on incentives are mere myths. One of the most important aspects of the cognitive bargaining model is that it shows where incentives may not be the right policy tool. This means that the model is falsifiable, and therefore, has intellectual rigor. The cognitive bargaining model shows promise as an analysis tool, because it is less focused on proving that positive incentives are the best policy tool, and more focused on determining the right application.

D. CARROTS VS. STICKS

Up to this point, the focus of this thesis has been on the effects of third party incentives. This does not mean that sanctions and threats could not be incorporated in this model as well. A tough sanction may negate a perceived gain, causing a state to move from the gains frame to a losses frame. A sanction or threat may have a similar, but opposite effect as an incentive. Other ways a third party could influence the model must also be considered. A third party could manipulate the information. By changing the description of the available options or the way an offer is framed, a third party may shift a state's perception of the status quo.⁸² While both information manipulation and punishments are certainly useful policy tools, this thesis focuses on the positive incentives. It is possible that an analysis of both sanctions and incentives together could

⁸² Kanner, "Framing and the Role of the Second Actor: An Application of Prospect Theory to Bargaining," 217.

be modeled within the cognitive bargaining construct. However, for the purposes of this thesis, the focus remains on the positive incentives and how they are accounted for within a cognitive bargaining model.

This chapter introduced bargaining literature and selected Fearon's bargaining and war as the base for the cognitive bargaining model. Since further insight was necessary, additional theoretical tools were evaluated. Berejikian and Kanner's application of prospect theory to rational choice models provided one path. The incorporation of the perception of status quo by the two states in conflict and adjusting expected utility to perceived utility are the two major changes to Fearon's model. The enhanced detail provided by the additional independent variables changed the dependent variable from the outbreak of war to the likelihood of an acceptable bargaining settlement. Using a greater fidelity within bargaining situations, the cognitive model showed promise as a way to analyze third party incentives. With the outline of the cognitive bargaining model cemented, the remaining chapters focus on the application of the model to a real world bargaining situation involving third party incentives.

III. UKRAINE'S 1992 BARGAIN

The cognitive bargaining model provides some useful intellectual insights, but is it applicable to real world bargaining situations? Does it help the understanding of when to use or not use positive incentives in a given situation? To evaluate the usefulness of the model, a case study is chosen. Chapter I showed that the United States has a varied history with respect to positive incentives. Although negative forms of influence have been more common, the United States has used positive incentives to help avoid war between Egypt-Israel, North-South Korea, and Pakistan-India. Another intriguing application of positive incentives occurred in the 1990s. The United States offered incentives to several of the Former Soviet Union (FSU) republics to relinquish their inherited Soviet nuclear weapons. Ukraine is especially interesting, because it became the world's third largest nuclear power in 1991, almost overnight. Many of their weapons were advanced intercontinental ballistic missiles (ICBMs), which were probably aimed at the United States.⁸³ Many negotiations occurred during the course of Ukraine's eventual denuclearization. In fact, the United States signed over 36 agreements between Ukraine, Kazakhstan, and Belarus before the denuclearization was complete.⁸⁴ This thesis zeros in on two of the most pivotal agreements involving Russia and Ukraine, the Lisbon Protocol and the Trilateral Agreement. This chapter focuses on the events surrounding the Lisbon Protocol. Chapter IV subsequently contrasts the use of incentives for the Lisbon protocol with the incentives offered for the Trilateral Agreement, signed by the United States, Russia, and Ukraine in January 1994.

This chapter begins with a review of the historical context surrounding Ukraine and Russia in 1991. Next, each variable is analyzed and placed into the cognitive bargaining model. Finally, the incentives offered in 1992 are evaluated within the cognitive bargaining model. It has been ascertained that the incentives offered to Ukraine by the United States in 1992 were greater than required.

⁸³ Ralph Begleiter, "Ukraine Completes Transfer of Tactical Nuclear Weapons," *CNN News*, May 6, 1992, Audio transcript of broadcast.

⁸⁴ U.S. Arms Control and Disarmament Agency, "Threat Control through Arms Control," Annual Report to Congress, Section G, 1994, 52–53.

A. HISTORICAL CONTEXT

In 1990, the world transitioned out from under the umbrella of the Cold War. Numerous conflicts erupted around the FSU during 1990–1991. Ukraine, geopolitically situated next to several of these conflicts, was heir apparent to a large portion of the Soviet military forces, including the world’s third largest nuclear arsenal.⁸⁵ The conflict areas are shown in red in Figure 12. John Mearsheimer, in a 1990 *International Security* article, argued that Ukraine should keep nuclear weapons to maintain a deterrent posture with Russia because Europe was headed toward destabilization.⁸⁶ In 1991, Mearsheimer’s concern appeared valid.



Figure 12. Conflicts throughout the FSU in 1990–1991.⁸⁷

⁸⁵ Lee Banville, “Tracking Nuclear Nonproliferation: Ukraine,” May 2, 2005, http://www.pbs.org/newshour/indepth_coverage/military/proliferation/countries/ukraine.html (accessed September 18, 2009).

⁸⁶ John J. Mearsheimer, “Back to the Future: Instability in Europe after the Cold War,” *International Security* 15, no. 1 (Summer 1990): 5–56.

⁸⁷ Unknown author, “Armed Conflict Events Database: 1990–1995,” <http://www.onwar.com/aced/chrono/index1990.htm> (accessed September 16, 2009); Imagery of East Europe/Asia, www.google.com/maps (accessed September 17, 2009).

With such a large nuclear inventory at its disposal and the apparent rise in surrounding conflicts, it seems irrational that Ukraine would hand over nuclear weapons to Russia, arguably their largest regional threat. However, this is exactly what Ukraine did. Some say this reaffirms that the “powerful do as they can and the weak suffer what they must.”⁸⁸ However, in this chapter, the cognitive bargaining model is used to explain Ukraine’s ‘irrational’ decision to denuclearize while accounting for the significant impact of third party incentives.

B. THE 1992 BARGAIN

How does the cognitive bargaining model improve understanding of Ukraine’s denuclearization decision in 1992? Does the cognitive bargaining model adequately account for the outcome of negotiations between Ukraine and Russia, which resulted in the Lisbon protocol? This begins by defining the simplifying assumptions and favored outcomes of both Ukraine and Russia. Each independent variable is then coded and overlaid on the cognitive bargaining model. The bargaining offer is placed on the model, and the likelihood of an acceptable agreement is determined. This section concludes by analyzing whether the cognitive bargaining model sufficiently accounts for this outcome.

First, several assumptions must be considered beyond those already discussed in Chapter III. Ukraine and Russia are assumed to be the principal actors in conflict. Although the United States was heavily involved in negotiations, there was no perceived threat of war between the United States and Ukraine. It is also assumed that the 1992 bargain was proposed and accepted or rejected at a single point in time. The Lisbon Protocol in May 1992 was a result of several months of back and forth negotiations. Since six months is a relative short time span in international negotiations, it was decided to group the negotiation outcomes between December 1991 and May 1992 to allow for a more comprehensive view of the bargain. Otherwise, a bargaining model must be developed for each preceding agreement to the Lisbon Protocol, which is overly cumbersome.

⁸⁸ Thucydides, *The History of the Peloponnesian War*, Book 5, Chapter XVII, 431 B.C. Est., translated by Richard Crawley.

Next, the favored outcomes of each side must be defined. Russia wanted a Ukraine that was submissive to Russia. In November 1991, Russian President Boris Yeltsin protested the potential secession of Ukraine, saying that, “It could be a serious blow for both the union and Russia.”⁸⁹ Russia attempted to maintain control over all the Soviet military troops and assets within Ukraine. The Commonwealth of Independent States (CIS) was an attempt by Russia to maintain a dominant role in military power throughout the Former Soviet Union republics.⁹⁰ Russia also desired control of Crimea, primarily because it housed the Former Soviet Union’s Black Sea Fleet, as well as space-based tracking stations.⁹¹ Nikita Khrushchev originally transferred Crimea to Ukraine in 1954, and some Russians viewed this transfer as nullified with the fall of the Soviet Union.⁹² Russia also did not want to have a nuclear neighbor. Russia preferred that Ukraine return all nuclear weapons to Russia, and they saw themselves as the only rightful heir to the Soviet Union’s nuclear forces. They wanted Ukraine to join the Nuclear Non-Proliferation Treaty (NPT) as a non-nuclear state. On the other hand, Ukraine wanted a fully sovereign and independent state free from Russian coercion. They preferred full control over former Soviet Union military assets, and did not want Crimea to become a separate state.⁹³ Ukraine also resisted assuming a share of the former Soviet Union’s \$82 billion in debt, hoping that Russia would take care of it.⁹⁴

With case specific assumptions and favored outcomes outlined, the groundwork is laid for the rest of the variables. This begins by inserting the same variables covered by the Fearon’s bargaining and war theory: probability of war victory (p), perceived cost of war for Ukraine (C_A), and perceived cost of war for Russia (C_B). These variables book

⁸⁹ Fred Hiatt, “Ukraine Reassures the West on Debts,” *The Washington Post*, Saturday Final Edition, November 30, 1991, A19.

⁹⁰ Richard A. Falkenrath, *Shaping Europe’s Military Order* (Cambridge: MIT Press, 1995), 154.

⁹¹ William Walker, “Nuclear Weapons and the Former Soviet Republics,” *International Affairs* 68, no. 2 (April 1992): 258.

⁹² Anders Aslund, *How Ukraine Became a Market Economy and Democracy* (Washington, D.C.: Peterson Institute for International Economics, 2009), 36.

⁹³ Leonid Golopatyuk, *Ukraine’s Security Option in the New Europe* (Master’s Thesis, Monterey: CA, Naval Postgraduate School, December 1998), 20.

⁹⁴ Adrian Karatnycky, “The Ukrainian Factor,” *Foreign Affairs* (July 1992): 90–97.

end the analysis of bargaining because they determine whether the available bargaining range was large or small. Next, the status quo points are determined for both Ukraine and Russia. Finally, specific components of the proposed bargain are placed along the subjective utility lines of both Ukraine and Russia.

P is the probability of winning war. Ukraine had no national military in 1991. Ukraine was focused on consolidating and legitimizing itself as a sovereign state. In November 1991, Kravchuk said, “We believe no single republic is able to defend itself alone...our defense is integrated.”⁹⁵ Kravchuk realized, very astutely, that Ukraine was in an extremely weak position to guarantee its own security. This was identified and attempts were made to bolster Ukraine’s security capacity. By early 1992, Ukraine established a national military. However, operational control was still extremely weak, and the loyalty of many of the military members was uncertain as Ukraine and Russia jockeyed for control of military resources.⁹⁶ One significant event clearly highlighted this tension. In February, six pilots took off from a Ukrainian military base in Staro-Kostiantyniv and flew their aircraft to Russia due to dissatisfaction with the breakup of Soviet Union forces.⁹⁷ Many in other divisions based in Ukraine also refused oaths of allegiance to Ukraine.⁹⁸ Ukraine had a very small chance of winning a military contest with Russia in late 1991, early 1992. Probability of war victory for Ukraine was no more than 25 percent. Any chance of victory would likely be attributed to outside assistance and not indigenous Ukrainian military capability.

⁹⁵ Hiatt, “Ukraine Reassures the West on Debts,” p. A19.

⁹⁶ David T. Twining, “Ukraine’s Defense Dilemma,” *Strategic Studies Institute* (Carlisle: Army War College, 1992), 2–5.

⁹⁷ Dianne Francis, “Ukraine: Playing Dangerous Chess Game While World Waits for a Winner,” *Financial Post*, Toronto, Canada, March 2, 1992, Monday, Weekly Edition, p. S6.

⁹⁸ The Associated Press, “Ukraine Reportedly Takes over Air Force Division,” *The Associated Press*, February 17, 1992, Monday AM cycle.

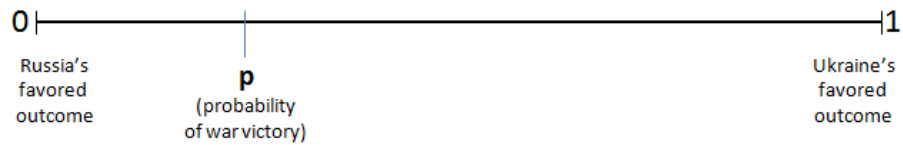


Figure 13. Probability of Ukraine Winning a War with Russia

C_A is Ukraine's perceived costs for war, which was very high in 1991–1992. Ukraine was intensely focused on state-building and winning over varied ethnic groups within their borders. Ukraine's two largest perceived threats were Russia and ethnic minorities (i.e., Russians). In fact, as of 1992, the perceived threat from the ethnic minorities was actually larger than the perceived threat from Russia (by 4%, 24%–Ethnic minorities, 20%–Russia).⁹⁹ The concern was that a war with Russia would not only devastate Ukraine militarily, but could also give rise to revolts by the ethnic Russians and lead to further problems with Crimea. At the same time, the nationalistic forces in Ukraine would not hesitate to fight if their statehood and sovereignty were seriously threatened, even though it would clearly be a total war.¹⁰⁰

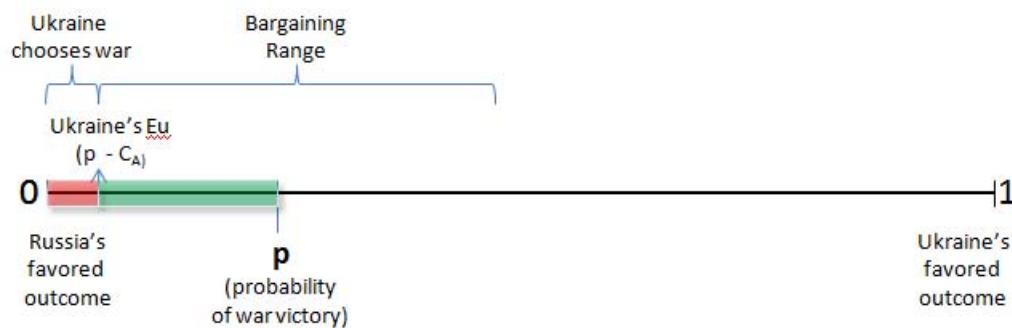


Figure 14. Ukraine's Perceived Utility for War

C_B is Russia's perceived costs for war. For Russia, the cost of fighting was also high. When Ukraine initially seceded from the Soviet Union, Yeltsin's spokesman, Pavel

⁹⁹ Christian Haerpfer, Cezary Milosinski, and Claire Wallace, "Old and New Security Issues in Post-Communist Eastern Europe: Results of an 11 Nation Study," *Europe-Asia Studies* 51, no. 6 (September 1999): 1001, 1005.

¹⁰⁰ Charles F. Furtado, Jr., "Nationalism and Foreign Policy in Ukraine," *Political Science Quarterly* 109, no. 1 (Spring 1994): 96–98.

Voshanov, said, “Russia reserves the right to review its borders with any republic that does not sign the new Union treaty.”¹⁰¹ Russia quickly retracted this statement, which signaled that they did not desire to provoke a war. Russia perceived the cost of war as high, both political and militarily. Subsequently, in August 1991 there was the failed coup attempt against the Soviet Union in Moscow. The coup’s failure to reestablish a strong, central Soviet Union accelerated the remaining demise.¹⁰² As the Soviet Union disintegrated, Gorbachev handed over the Presidency to Boris Yeltsin in December 1991. During this time, there was significant internal political turbulence as factions within Russia adjusted to this power shift.¹⁰³ However, the rise of the liberal reformers in Russia, who held more Western ideals, was balanced in Russia’s parliament by the conservative communist hardliners, which still dominated much of the Russian parliament.¹⁰⁴ Allegedly, Russia initially considered war with Ukraine when it refused to sign the economic community treaty, according to Konstatnin Masik during conversations with Gorbachev and Yeltsin in Moscow. However, it is unclear whether this was rumor or a subversive signal by the Russian president, Yeltsin.¹⁰⁵ Regardless, Russia did not go to war because they knew the costs of such an action were high. Ukrainian President Leonid Kravchuk estimated that Ukraine contained about 33% of the FSU’s forces.¹⁰⁶ Ukraine had tactical and strategic nuclear weapons in its possession until May 7, 1992, when the last tactical weapon was officially transferred to Russia for dismantlement.¹⁰⁷ Russia’s perceived costs of a war against Ukraine, who had the potential to use nuclear weapons if attacked, were very high.

¹⁰¹ Richard A. Falkenrath, *Shaping Europe’s Military Order* (Cambridge: MIT Press, 1995), 158.

¹⁰² *Ibid.*, 151.

¹⁰³ Ronald J. Bee, “Nuclear Proliferation: The Post Cold-War Challenge,” *Foreign Policy Association Headline Series*, no. 303 (Summer 1994): 31–33.

¹⁰⁴ Falkenrath, *Shaping Europe’s Military Order*, 154.

¹⁰⁵ Vitaly Portnikov, “Yeltsin Discussed with the Military a Possibility of a Nuclear Strike at the Ukraine,” *Russian Press Digest* (Nezavisimaya Gazeta), October 24, 1991, 1.

¹⁰⁶ “Army Commander: Most Officers Pledge Allegiance to Ukraine,” *The Associated Press*, February 12, 1992, Wed AM cycle.

¹⁰⁷ Victor Litovkin, “Tactical Nuclear Weapons in the Ukraine: Kravhuk and the Command of the Joint Armed Forces Refute Each Other’s Statements,” *Russian Press Digest*, May 7, 1992.

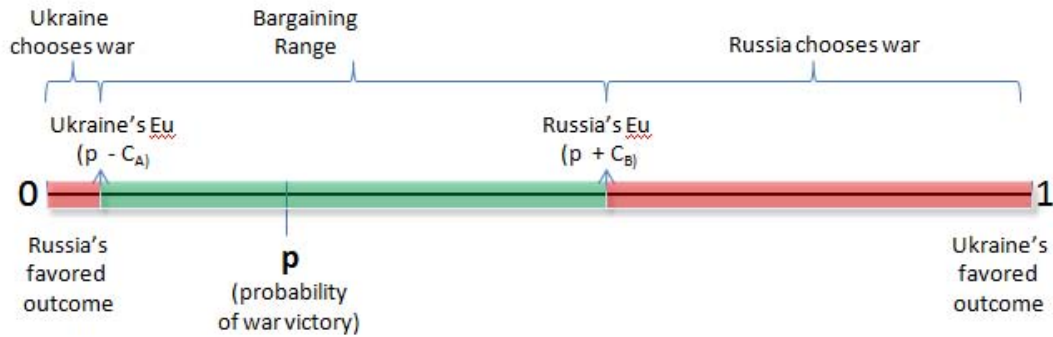


Figure 15. Russia's Perceived Utility for War

SQ_U is the perception of the status quo by Ukraine. This is especially difficult to define in 1991–1992 since the entire security structure in Eastern Europe was in transition. Ukraine was risk acceptant when they stepped out and declared independence from the Soviet Union, despite Gorbachev's opposition.¹⁰⁸ However, by late 1991 to early 1992, status quo lines were beginning to form between Ukraine and Russia. Even so, both Ukraine and Russia were not entirely sure where the status quo was. Each state only knew where they preferred it to settle. Ukraine was very concerned that Russia would undermine its sovereignty, either overtly or subversively.¹⁰⁹ On December 9, 1991, Gorbachev said that the Russian Republic was likely to claim territory from states that decided to quit the USSR, mentioning Crimea specifically.¹¹⁰ In April 1992, Russia laid claim to the 14th group Army, which was stationed in Moldova. Ukraine saw this act as a willingness by Russia to undermine Moldova's sovereignty.¹¹¹ Ukraine also viewed Russia's attempt to exert military control through the framework of the Commonwealth of Independent States as an attempt to undermine Ukraine's sovereignty. As a result, they resisted any measure that strengthened the CIS, and ultimately, withdrew altogether. Ukraine originally saw the CIS as a way to ensure the collapse of the Soviet Union, but

¹⁰⁸ Alan Cooperman, "Ukraine Wins Recognition, Plans its Future While Soviets Ponder Theirs," *The Associated Press*, December 3, 1991, Tuesday AM cycle.

¹⁰⁹ Mitchell Reiss and Robert S. Litwak, *Nuclear Proliferation after the Cold War. Introduction* (Washington, D.C.: Woodrow Wilson Center Press, 1994), 117.

¹¹⁰ Sergei Tsikora, "Fundamental Differences in the Presidents' Views," *Russia Press Digest* (Izvestia), December 9, 1991, 2.

¹¹¹ "Former Soviet Group Army in Moldova Threatens Armed Actions," *Xinhua General News Service*, Moscow, April 2, 1992.

viewed further collaboration as overly dominated by Russia.¹¹² Ukraine asserted itself as heir to former Soviet infrastructure and equipment, but also knew that Russia held a legitimate claim to a portion of the same, especially the nuclear forces. Ukrainian foreign minister Anatoly Zlenko said that Ukraine wants, “to be a neutral, non-nuclear state not taking part in military blocs.”¹¹³ Ukraine’s perceived status quo consisted of no real interest in nuclear weapons other than as a bargaining chip. This was for three reasons. First, there was significant domestic opposition to nuclear weapons because of the Chernobyl nuclear power plant disaster.¹¹⁴ The Ukraine Chernobyl Ministry estimated, “50,000 people died of ailments...more than 2.8 million, including 600,000 children have cancers, thyroid problems, or other illnesses...and 100,000 people lost their homes.”¹¹⁵ Even if these numbers are inflated, they signal the psychological effect of the disaster on the population of Ukraine. Second, the international community recognized Russia as the sole heir to Soviet nuclear weapons. Challenging the international community was sure to bring about tough sanctions. Finally, the maintenance of the weapons and command and control structure was rooted in Russia, which caused technical problems for asserting full ownership of nuclear weapons.¹¹⁶ Professor Vasylenko of Kiev University also argued, “You cannot have a nuclear force that is not tied to the Russian force, because of technology and control systems. By being a nuclear power we would not have full independence.”¹¹⁷ Volodymyr Filenko, who later became the head of the Nova Ukrainia disagreed. Filenko argued against giving up nuclear weapons because, “...It would upset the balance of power...We’re afraid of Russia...We’re fighting for independence from Russia.”¹¹⁸ Although there was disagreement about the technical feasibility of gaining

¹¹² Falkenrath, *Shaping Europe’s Military Order*, 152–153.

¹¹³ Alan Cooperman, “Ukraine Wins Recognition, Plans its Future While Soviets Ponder Theirs,” *The Associated Press*, December 3, 1991, Tuesday AM cycle.

¹¹⁴ Interview with Leonid Kravchuk by the Russian Information Agency, TASS, “Ukraine Wants to Get Rid of Nuclear Weapons,” *Moscow*, December 25, 1991, Wednesday.

¹¹⁵ Marta Kolomayets, “Ukraine Turns to Nuclear Power,” *The Associated Press*, December 29, 1993, Wednesday PM cycle.

¹¹⁶ Falkenrath, *Shaping Europe’s Military Order*, 160.

¹¹⁷ J. F. Dunn, “The Ukrainian Nuclear Weapons Debate,” *Soviet Studies Research Centre*, Camberley, UK, (March 1993), in reference to *Financial Times* article.

¹¹⁸ *Ibid.*

full control of the launch sequence and targeting information, the general consensus in Ukraine was that they would have more success consolidating sovereignty and gaining approval of the international community if they did not hold onto them. Even though Ukraine did not want to retain the nuclear weapons, they claimed the right to control the non-use of strategic weapons on Ukrainian territory.¹¹⁹ The resulting status quo perception by Ukraine in relation to their favored outcome is shown along the X-axis of our cognitive bargaining model in Figure 16.

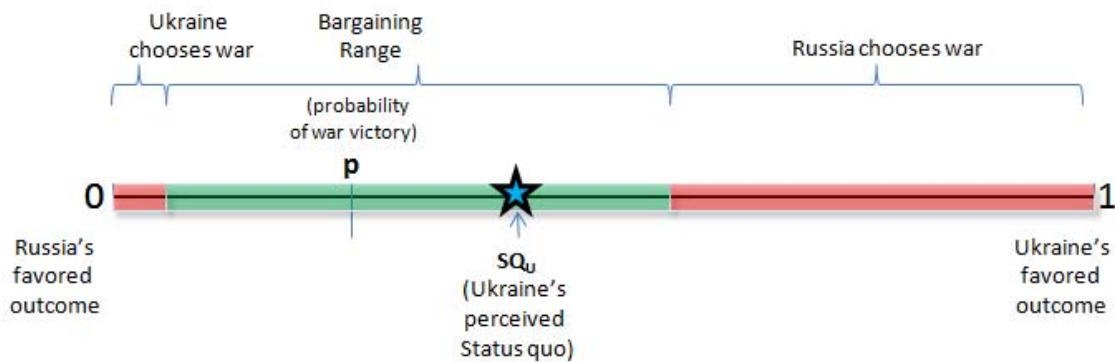


Figure 16. Ukraine's Perceived Status Quo

SQ_R is Russia's perception of their status quo, which was also in transition from late 1991 to early 1992. Although Russia desired to maintain all of the former Soviet Union equipment and infrastructure, they realized that the newly independent states would probably inherit some of their Soviet empire. Realizing this, Russia quickly moved to claim the central media organization, the interior and foreign ministries, and the security and intelligence services for Russia.¹²⁰ This was consistent with Russia's perception of itself. Sweryn Bialer argues, "Russia was the Soviet Union. The Russian republic was the first among fifteen; Russian power and Soviet power were synonymous. Russians ruled the Soviet Union, even as local non-Russian communist elites ran the day-to-day affairs of their own regions."¹²¹ Russia wanted to keep as much power as possible,

¹¹⁹ Victor Litovkin, "Russia and Ukraine Still Wrangling over Nuclear Button," *Russian Press Digest*, (Izvestia) May 27, 1992, 1.

¹²⁰ Falkenrath, *Shaping Europe's Military Order*, 153.

¹²¹ Seweryn Bialer, "The Death of the Soviet Communism," *Foreign Affairs* 70, no. 5 (Winter 1991): 174.

even though the Soviet Union had failed. Russia used the protection of ethnic Russians as a rationale for exerting influence in FSU republics. The loss of Ukraine as a part of the Soviet Union was not easy for Russians to digest due to their long shared history.¹²² Russia only regrettably recognized Ukraine as an independent state, and they thought that Russia deserved the dominant voice in the policies of all the former Soviet Republics. Russia sought to exert primary influence on former Soviet military personnel, policy, and equipment through the CIS. Russia envisioned that they would still be first among a combined military comprised of the 15 states of the former Soviet Union. For this reason, Russia did not create its own separate armed forces until much later than the other republics, and why it initially opposed the creation of its own separate armed forces.¹²³ Russia saw itself as the only rightful heir to the strategic nuclear forces of the former USSR. For Russia, the status quo clearly consisted of no nuclear weapons in neighboring states.

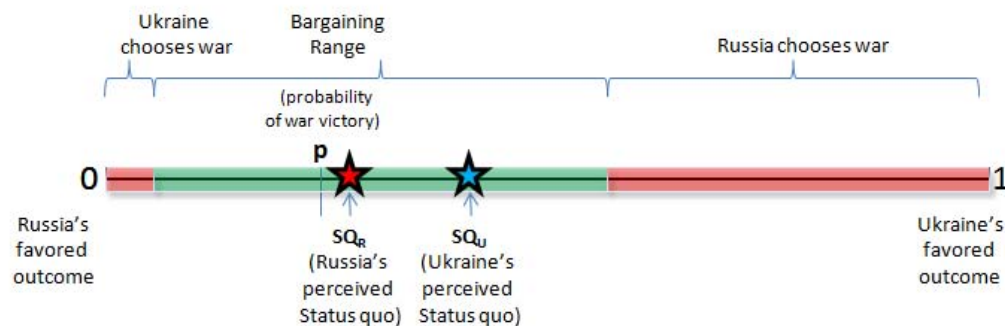


Figure 17. Russia's Perceived Status Quo

Next, the subjective utility curves are overlaid (Figure 18). Subjective utility intersects the x-axis through the perceived status quo of each state. It is important to note, that the bargaining situation in 1991 was a lose-lose situation. This meant that Russia

¹²² Falkenrath, *Shaping Europe's Military Order*, 154.

¹²³ Professor Mikhail Tsyppin, interview with the author, November 19, 2009, confirmed by information from James H. Brusstar and Ellen Jones, *The Russian Military's Role in Politics*, McNair Paper 34, Institute for National Strategic Studies, National Defense University (Washington, D.C., January, 1995), 17–18.

would have to exert some sort of coercive diplomacy if it hoped to convince Ukraine to sign an agreement that was less than Ukraine's perceived status quo. Since Ukraine was the weaker state, it is unlikely that it had the capacity to exert coercive diplomacy on Russia to sway the outcome in its favor. The only other way for each state to obtain a gain (with respect to their perceived status quo) would be to trade an issue area it valued less, for one that each valued more.

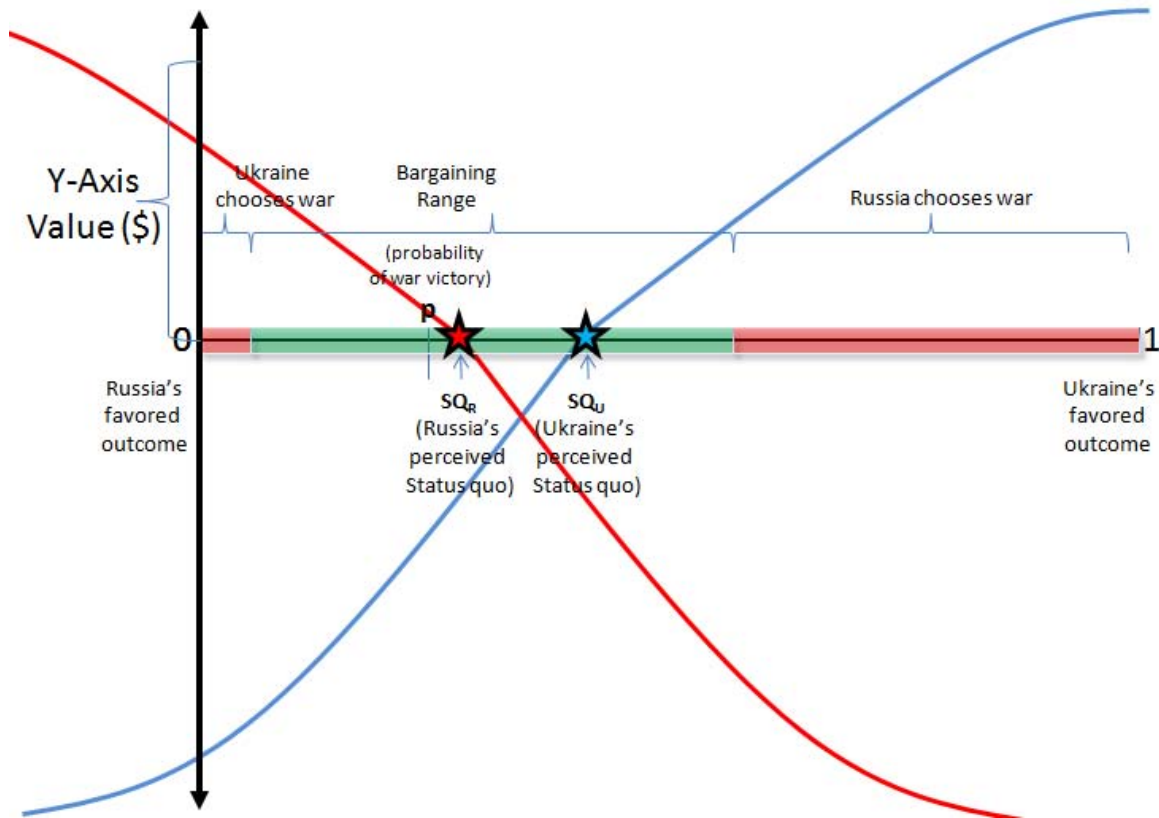


Figure 18. Subjective Utility Functions Overlaid through Status Quos

X represents the bargaining offer, or proposed bargain. In its Declaration of State Sovereignty July 16, 1990, Ukraine claimed a goal of neutrality as a state. It stated that it would “not participate in any military conflicts in other states, not join any alliances or blocs, and not let foreign forces use Ukrainian military bases within Ukraine.”¹²⁴ On August 26, 1991, Ukraine's Rada put forth a referendum that asserted both independence

¹²⁴ Golopatyuk, *Ukraine's Security Option in the New Europe*, 27.

of Ukraine as well as control of all Soviet military assets on Ukraine's territory.¹²⁵ On October 22, 1991, Ukraine's parliament voted to form the Ukrainian national military. This was done despite Gorbachev's warnings the day prior that it would be considered a dangerous and unconstitutional act. On October 24, Ukraine stated that the nuclear weapons on their soil belonged to Russia, but Ukraine was entitled to joint operational control.¹²⁶ The Minsk agreement in December 1991 called for complete withdrawal of nuclear weapons from Kazakhstan, Belarus, and Ukraine by 1994.¹²⁷ On December 12, 1991, Ukraine formally disintegrated the Soviet military on Ukrainian soil and put the 1.5 million former Soviet troops under the command of the Ukrainian President. January 3, 1992, Kravchuk issued Ukrainian military oaths to all Soviet soldiers in Ukraine. Russia responded by issuing its own military oath on January 5, 1992 to all Soviet troops. In March, Ukraine fought against attempts for it to share the USSR \$82 billion in debt. However, it ended up accepting 21.13 percent, or approximately 17 billion (U.S. dollars) of the debt.¹²⁸ Ukraine claimed all non-strategic assets of the Black Sea fleet in April 1992 (approximately 80% of the fleet). In response, Russian President Boris Yeltsin claimed 100% of the same fleet. Ukraine and Russia finally divided the fleet shortly after the Lisbon protocol was signed, through an 18-point accord.¹²⁹ Additionally, Ukraine transferred its last tactical nuclear weapon to Russia by May 1992.¹³⁰ Both sides went to the negotiating table in May 1992 and eventually signed the Lisbon protocol to the START I treaty. Ukraine agreed to relinquish the rest of its nuclear weapons to Russia and reaffirmed its commitment to join the NPT.¹³¹ This agreement was aided by U.S.' technical support and financing of the denuclearization efforts.¹³² Specifically, the Nunn-

¹²⁵ Falkenrath, *Shaping Europe's Military Order*, 156.

¹²⁶ Twining, "Ukraine's Defense Dilemma," 2-3.

¹²⁷ Lewis A. Dunn, "New Nuclear Threats to U.S. Security," in *New Nuclear Nations: Consequences for U.S. Policy*, ed. Robert Blackwill and Albert Carnesale, Ch. 2 (New York: Council on Foreign Relations Press, 1993), 29.

¹²⁸ Karatnycky, "The Ukrainian Factor," 5.

¹²⁹ Twining, "Ukraine's Defense Dilemma," 5.

¹³⁰ J. F. Dunn, "The Ukrainian Nuclear Weapons Debate."

¹³¹ Twining, "Ukraine's Defense Dilemma," 3, 5.

¹³² Robert V. Barylski, *The Soldier in Russian Politics* (New Brunswick: Transaction Publishers, 1998), 215.

Lugar legislation set aside \$175 million for Ukraine.¹³³ Additionally, the United States promised \$155 million in economic aid to Ukraine.¹³⁴ The United States also offered most favored nation trading status to Ukraine, which was signed by President Bush and Kravchuk in a meeting in Washington, D.C. in May 1992.¹³⁵ Meanwhile, donors were gathered to raise an estimated \$11 billion needed for food, medical care, housing, energy, and technical advice to all of the CIS countries.¹³⁶ Both Russia and Ukraine relinquished something less important to them than what they gained. Ukraine gained more sovereignty by securing conventional Soviet troops and equipment on Ukrainian soil under the banner of the Ukrainian national military. Russia valued a denuclearized Ukraine more than Ukraine cared about nuclear weapons. United States' incentives to Russia were the best use in 1992, since it was in the United States' best interest for nuclear weapons to go to Russia from Ukraine. It was reported that Russia was earmarked for \$600 million (U.S. dollars) in an economic assistance package.¹³⁷

The cognitive bargaining model depicts how U.S. incentives moved Russia from a losses frame into a gains frame in Figure 19. Incentives were indeed crucial to the agreement in 1992. For Russia, the gains from U.S. incentives, nuclear weapons from Ukraine, and Ukraine assuming its portion of the Soviet debt, outweighed the loss of conventional forces and the establishment of an independent Ukrainian military. No coercive diplomacy was required for Russia to accept the agreement. Since Ukraine did not highly value nuclear weapons beyond their utility as a bargaining chip, the issues that fell into their losses frame were minimal. Ukraine desperately needed recognition from the international community as an independent state and an independent sovereign national military. These were huge gains for Ukraine in 1992. Incentives from the United States were appreciated, but Ukraine was not as motivated by the U.S.' offers of

¹³³ Philippe Jehiel, Benny Moldovanu, and Ennio Stacchetti, "How (Not) to Sell Nuclear Weapons," *The American Economic Review* 86, no. 4 (September 1996): 814.

¹³⁴ Thomas Bernauer, Stephan Brem, and Roy Suter, "The Denuclearization of Ukraine," in *The Politics of Positive Incentives in Arms Control*, ed. Thomas Bernauer and Dieter Ruloff, Ch. 4 (Columbia: University of South Carolina Press, 1999), 121.

¹³⁵ Karatnycky, "The Ukrainian Factor," 9.

¹³⁶ "Donors Drawing Up Plans for CIS Aid," *Agence France Presse*, May 23, 1992.

¹³⁷ RusData Dialine, "USA—Ukraine: Buy Anytime You Like," *BizEkon News*, May 23, 1992.

incentives as they were by the recognition of independence from Russia. Since Ukraine's summed perception of the bargain in 1992 was a gain from its perception of the status quo, U.S. incentives were not crucial to securing Ukraine's acceptance of the bargain. However, Ukraine had become the 4th largest recipient of U.S. assistance almost overnight.¹³⁸ The magnitude and relative ease of obtaining incentives from the United States was not lost on Ukrainian politicians. However, there were still issues untouched by the bargain in 1992, such as the status of Crimea. As the next chapter discussed, once Ukraine secured a national military and further established its sovereignty, a new bargaining proposal emerged.

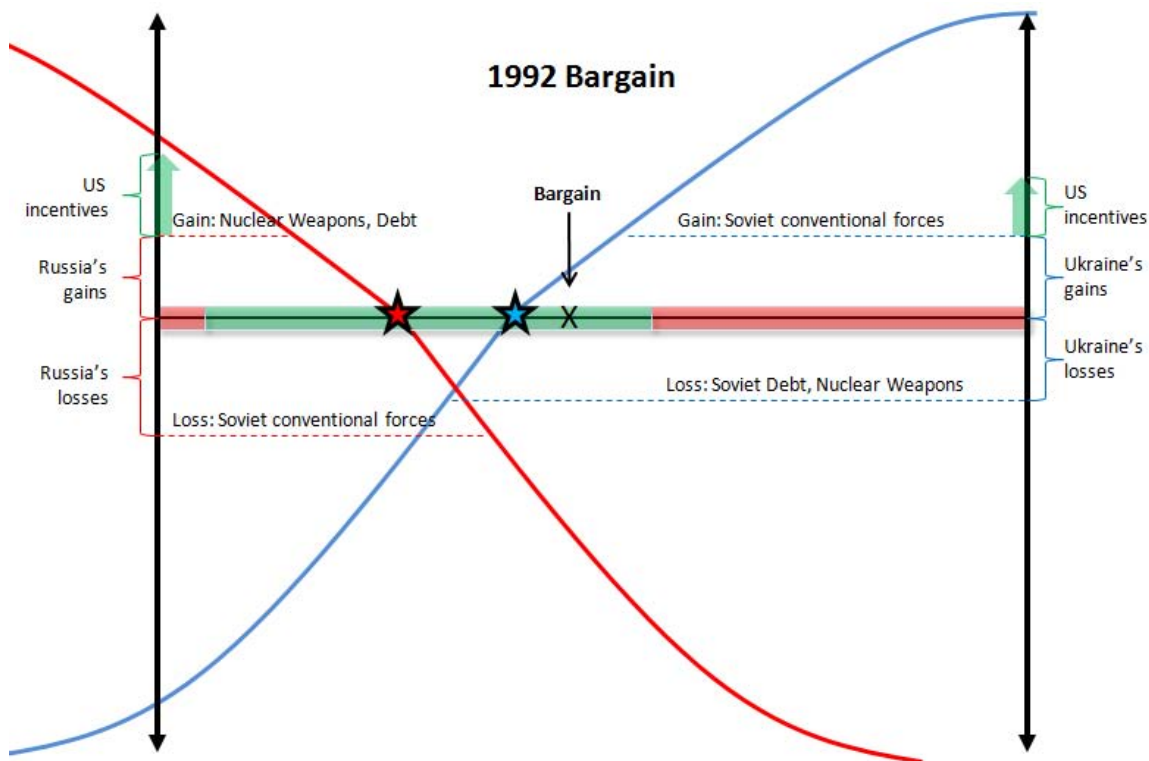


Figure 19. 1992 Lisbon Protocol Agreement.

This chapter began by reviewing the security context surrounding Ukraine and Russia in 1991. The independent variables for the bargain between Russia and Ukraine were then overlaid on the cognitive bargaining model. Although some variables, such as perceptions of status quo were not yet solidified in 1992, the cognitive bargaining model

¹³⁸ Jehiel, Moldovanu, and Stacchetti, "How (Not) to Sell Nuclear Weapons," 814.

still provides insights into the bargain. Most importantly, the cognitive bargaining model predicts that Ukraine would have likely accepted a bargain, even without U.S. incentives. However, incentives clearly helped guarantee Ukraine acceptance of the Lisbon protocol. By offering incentives to both Ukraine and Russia, the United States ensured that the denuclearization of Ukraine would continue swiftly. However, as the next chapter discusses, this also sparked an intriguing second order effect.

IV. UKRAINE'S 1994 BARGAIN

Shortly after the Lisbon protocol was signed and the Rada ratified the agreement, Ukraine increased its demands. This trend continued throughout late 1992 to early 1994. This begs the question, “What was different about Ukraine’s security situation, once the Lisbon protocol was signed?” This chapter begins by exploring the differences from mid-1992 to early 1994. Then, Ukraine’s proposed bargain in 1994 is overlaid on the cognitive bargaining model. The proposed 1994 bargain is compared to the final 1994 bargain within the context of the cognitive bargaining model. The cognitive bargaining model does a reasonable job of explaining Ukraine’s ever increasing demands between 1992 and 1994, and it explains why further incentives by the United States were necessary for the success of the 1994 Trilateral Agreement.

A. WHAT CHANGED?

After the Lisbon protocol agreement in May 1992, Ukraine’s remaining nuclear forces consisted of 176 ICBMs and 1,240 warheads along with several strategic bombers.¹³⁹ From 1992–1994, Ukraine demanded more and more financial aid and security guarantees in exchange for its strategic nuclear weapons.¹⁴⁰ On November 10, 1992, President Kravchuk said in a press conference, “in order for Ukraine to complete disarmament, we must have some material benefit and fixed guarantees for its security.”¹⁴¹ Ukrainian Ambassador Vladimir Kryzhanovsky summarized Ukraine’s economic demands in a press conference in Russia in 1993. He said that Ukraine was,

entitled to a compensation for tactical nuclear weapons...in money, or, we hoped, components of nuclear power plants [nuclear fuel]...[Additionally,] the Western world meets Russia halfway on the issue of foreign debt repayment, debt rescheduling, so I believe Russia, our fraternal country, must treat Ukraine the same way...we suggest that Russia sell us gas and energy at domestic prices and the difference will be

¹³⁹ J. F. Dunn, “The Ukrainian Nuclear Weapons Debate.”

¹⁴⁰ Sherman W. Garnett, Lecture notes, “The “Model” of Ukrainian Denuclearization,” Presentation, USAF Academy, August 25, 2009.

¹⁴¹ Borys Klymenko, “Ukraine Seeks Security Guarantees Compensation before Ratifying START,” *The Ukrainian Weekly* LX, no. 46 (Sunday, November 15, 1992).

our state's debt...According to some estimates, the disposal [of the strategic nuclear weapons] will require \$2-5 billion...If the world community wants Ukraine to get rid of her nuclear weapons as soon as possible, it should be helped...We are not demanding that the world community should raise our living standards...we asked for help only to ship away nuclear weapons.¹⁴²

Ukraine perceived that it was getting shortchanged on economic aid. Most of the incentives promised by the United States and others in 1992 had since gone to Russia.¹⁴³ Ukraine rejected a U.S. offer of \$175 million to help with decommissioning Ukrainian nuclear weapons as too little.¹⁴⁴ Foreign Minister Anatoliy Zlenko said that Ukraine needed the “proper help we expect from outside, including western countries.”¹⁴⁵ On October 28, 1992, Defense Minister Morozov admitted, “Ukraine still had not received any foreign assistance with decommissioning its nuclear weapons.”¹⁴⁶ Some argued that money promised by the United States had still not been seen by Ukraine or Kazakhstan by the beginning of 1993.¹⁴⁷ Ukraine's perceived that the incentives offered under the Lisbon protocol were only half-heartedly implemented.¹⁴⁸ As a result, in November 1993, Ukraine's Rada essentially nullified the Lisbon protocol agreement, leaving Ukraine's nuclear future in doubt.¹⁴⁹

Ukraine also perceived a growing security gap. They viewed their primary threat as Russia. Ukraine saw that they were not prepared to defend themselves against Russian coercion. Butenko, Ukrainian President Kravchuk's representative, said, “[Russia] has

¹⁴² Vladimir Kryzhanovsky, “Press Conference by Ukrainian Ambassador Vladimir Kryzhanovsky,” *Official Kremlin International News Broadcast*, November 23, 1993.

¹⁴³ J. F. Dunn, “The Ukrainian Nuclear Weapons Debate.”

¹⁴⁴ Ibid.

¹⁴⁵ Ibid.

¹⁴⁶ Ibid.

¹⁴⁷ Reiss and Litwak, *Nuclear Proliferation after the Cold War. Introduction*, 107.

¹⁴⁸ Ibid., 110.

¹⁴⁹ Sherman W. Garnett, “Sources and Conduct of Ukrainian Nuclear Policy: November 1992 to January 1994,” in *The Nuclear Challenge in Russia and the New States of Eurasia*, ed. George H. Quester, Ch. 7 (New York: M.E. Sharpe, 1995), 138.

territorial claims toward Ukraine and is trying to interfere in its internal affairs.”¹⁵⁰ Lack of negotiating power in disputes over price liberalization and energy prices further highlighted Ukraine’s weak position. Ukraine realized it needed help with security. The Deputy Foreign Minister, Boris Tarasyuk outlined what Ukraine hoped for:

It is a question of the nuclear states making a political commitment in the form of an appropriate document stating that they will regard as unacceptable any use or threat of force against Ukraine on the part of the nuclear states. Needless to say, this kind of commitment does not guarantee Ukraine's security, but it will be of tremendous political and legal importance.¹⁵¹

The last reason for the increased demand in compensation for giving up nuclear weapons was economic troubles.¹⁵² The economy performed so poorly that Ukraine agreed to sell a portion of its Black Sea fleet in September 1993 in exchange for debt relief from Russia.¹⁵³ Ukraine’s last bargaining chip was their strategic nuclear weapons, and they perceived that they must maximize what they could gain in exchange for them.

The following analysis compares the variables in the cognitive bargaining model in 1992 to the situation in 1994. Ukraine’s perceived utility (C_{A2}), Russia’s perception of status quo (SQ_R), and the favored outcomes of Russia and Ukraine did not change significantly from 1992 to 1994. There were, however, three important differences in 1994. The probability of victory of war by Ukraine (P_2) increased slightly, Russia’s cost of war increased (C_{B2}), and, most importantly, Ukraine’s perception of the status quo (SQ_U) shifted to match their desire for a more favorable bargaining outcome.

P_2 is the probability of war victory by Ukraine in 1994. By 1994, Ukraine had finally consolidated a reliable national military. All tactical nuclear weapons had been

¹⁵⁰ Bogdan Turek, “Ukraine Wants Security Guarantees from Nuclear Powers,” *United Press International*, October 28, 1993, Thursday, BC Cycle.

¹⁵¹ J. F. Dunn, “The Ukrainian Nuclear Weapons Debate.”

¹⁵² Furtado, Jr., “Nationalism and Foreign Policy in Ukraine,” 100.

¹⁵³ Sherman W. Garnett, “Sources and the Conduct of Ukrainian Nuclear Policy,” in *The Nuclear Challenge in Russia and the New States of Eurasia*, ed. George H. Quester, Ch. 7 (New York: M.E. Sharpe, 1995), 134.

handed over to Russia.¹⁵⁴ Ukraine still held strategic nuclear weapons, but they were not very useful against Russia because they were inter-continental ballistic missiles. Unfortunately, Russia borders Ukraine.¹⁵⁵ Additionally, Ukraine did not have clear operational control of the ICBMs and the costs of maintaining them were very high.¹⁵⁶ Some estimate that the annual cost of maintenance was in excess of \$5 billion.¹⁵⁷ Ukrainian Ambassador to the UN, Victor Batiouk, argued that this was simply not sustainable under Ukraine's current economic condition.¹⁵⁸ General-Colonel Bizhan, Deputy Minister of Defense, similarly declared, " ... in today's economic situation, the Ukraine cannot consider the destruction of nuclear weapons its priority task."¹⁵⁹ Even so, there was a chance that Ukraine could develop operational control over the nuclear weapons, or deliver a weapon via other means, such as a strategic bomber. Although Ukraine could not establish a credible deterrent relationship with Russia, the chance of nuclear conflict was still in the back of Russia's mind. In the meantime, a military and defense relationship between Ukraine and the United States had developed.¹⁶⁰ Russia's military showed signs of weakening. The chance of war victory shifted slightly in Ukraine's favor due to the successful creation of a national military and a defense relationship with the United States. However, Ukraine's chance of a war victory against Russia was still very small.

¹⁵⁴ Thomas Bernauer, Stefan Brem, and Roy Suter, "The Denuclearization of Ukraine," in *The Politics of Positive Incentives in Arms Control*, ed. Thomas Bernauer and Dieter Ruloff, Ch. 4 (Columbia, University of South Carolina Press: 1999), 112.

¹⁵⁵ Lewis A. Dunn, "New Nuclear Threats to U.S. Security," 30.

¹⁵⁶ J. F. Dunn, "The Ukrainian Nuclear Weapons Debate."

¹⁵⁷ Jehiel, Benny Moldovanu, and Ennio Stacchetti, "How (Not) to Sell Nuclear Weapons," 814.

¹⁵⁸ J. F. Dunn, "The Ukrainian Nuclear Weapons Debate."

¹⁵⁹ Ibid.

¹⁶⁰ Stephen Garnett, lecture notes, conference at the USAF Academy (August 2009), 11.

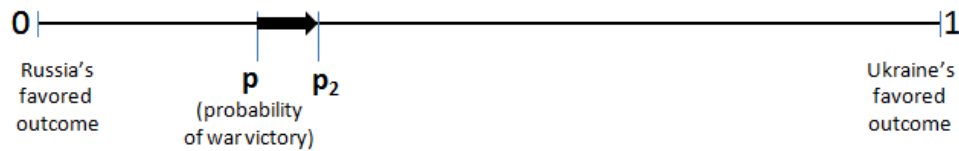


Figure 20. 1994–Small Change in Probability of War Victory

C_{B2} is the costs of war for Russia in 1994. Throughout 1993, Russia increased its influence over what it called its “near abroad.” Russia questioned the status of the 14th Army in Moldova, interfered in the Georgia civil war, and cut off troop negotiations with the Baltic States.¹⁶¹ Additionally, some Russian politicians, likely led by Alexander Rutskoi and Sergei Stankievich, even questioned the sovereignty of Ukraine by putting forth a decree questioning Ukraine’s right to Crimea.¹⁶² However, even with increased aggressiveness, there were still many internal issues in Russia. Due to economic crisis, political clashes, and Ukraine’s recognition as an independent state by the international community, Russia’s cost of war with Ukraine actually increased slightly between 1992 and 1994; thereby, decreasing their benefit of war (C_{B2}).¹⁶³ This widened the bargaining range slightly in Ukraine’s favor.

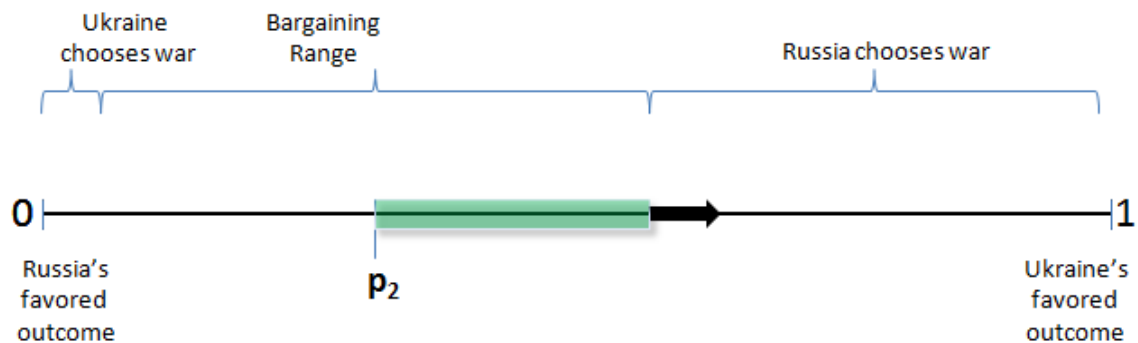


Figure 21. 1994–Small Change in Russia's Costs for War

¹⁶¹ Furtado, Jr., “Nationalism and Foreign Policy in Ukraine,” 101–102.

¹⁶² Ibid.

¹⁶³ Mitchell Reiss and Robert S. Litwak, *Nuclear Proliferation after the Cold War, Introduction* (Washington, D.C.: Woodrow Wilson Center Press, 1994), 107.

C_{A2} is Ukraine's cost of war with Russia in 1994. By 1994, Ukraine's costs for fighting a war with Russia were approximately equal. Ukraine was faced with high costs of maintaining nuclear weapons. It had a national military, but had not yet built a fully credible force.¹⁶⁴ "Igor Derkach, Deputy Chairman of the Parliamentary Commission on Defense and State Security argued that, "were Russia to press a claim, the Ukraine would be unable to defend its territory with conventional weapons."¹⁶⁵ Ukraine appeared to be losing support in Crimea and its economy was in shambles.¹⁶⁶ While Ukraine and the United States increased their defense relationship and military dialogue, it was still too early to tell whether U.S. support for Ukraine would come through in a conflict with Russia.¹⁶⁷ Ukraine would still have been devastated by a war with Russia, and the costs in 1994 were just as high as in 1992.¹⁶⁸



Figure 22. 1994–No Shift in Ukraine's Cost of War

SQ_U: Figure 23 shows Ukraine's shift in status quo. Ukraine's status quo shifted because Ukraine had consolidated a national government and military and achieved independence from Russia. With initial sovereignty established, Ukraine's status quo moved toward its favored outcome in the model. Even though establishment of a Ukrainian national conventional military was a bargaining chip in 1992, it was no longer

¹⁶⁴ Sherman W. Garnett, "Sources and the Conduct of Ukrainian Nuclear Policy," 142.

¹⁶⁵ J. F. Dunn, "The Ukrainian Nuclear Weapons Debate."

¹⁶⁶ Sherman W. Garnett, "Sources and the Conduct of Ukrainian Nuclear Policy," 145.

¹⁶⁷ Ibid., 143.

¹⁶⁸ Furtado, Jr., "Nationalism and Foreign Policy in Ukraine," 100.

a lever that Russia could negotiate over by 1994. Also, most of the international community had finally recognized Ukraine as an independent state. Ukraine realized that it had gained many incentives in 1992, and assumed that it was entitled to even more compensation in exchange for its strategic nuclear arsenal.¹⁶⁹ Ukraine's status quo perception had shifted toward its favored outcome.

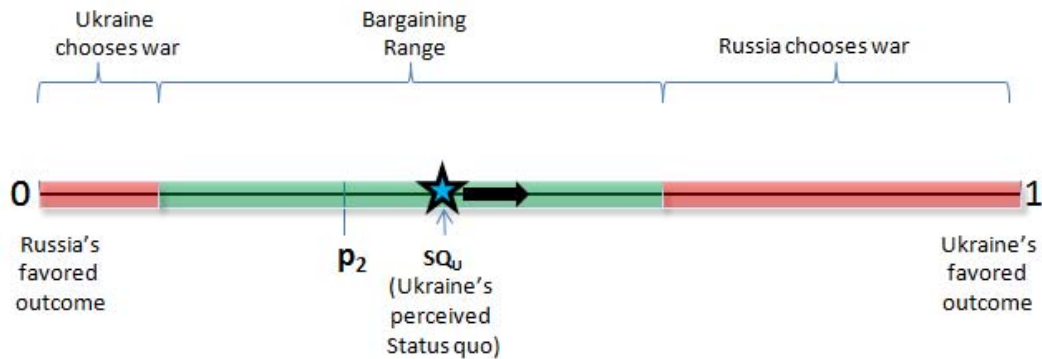


Figure 23. 1994–Ukraine's Shift in Perception of Status Quo

SQ_R: Russia's perception of status quo was not that different between 1992 and 1994. They successfully obtained Ukraine's tactical nuclear weapons, but strategic nuclear weapons were still on Ukrainian soil. Russia continually perceived that it should still be entitled to some influence over Ukraine and was the rightful owner of Ukraine's strategic nuclear weapons. In November 1993, Russia issued a statement saying they would no longer help maintain Ukraine's 176 strategic missiles.¹⁷⁰ These statements were intended to pressure Ukraine further to relinquish its remaining nuclear weapons. Russia's perception of status quo did not shift significantly.

¹⁶⁹ Bernauer, Brem, and Suter, "The Denuclearization of Ukraine," 120.

¹⁷⁰ United Press International, "Russia Refuses to Recognize Ukraine's START I Ratification," Moscow, November 26, 1993.

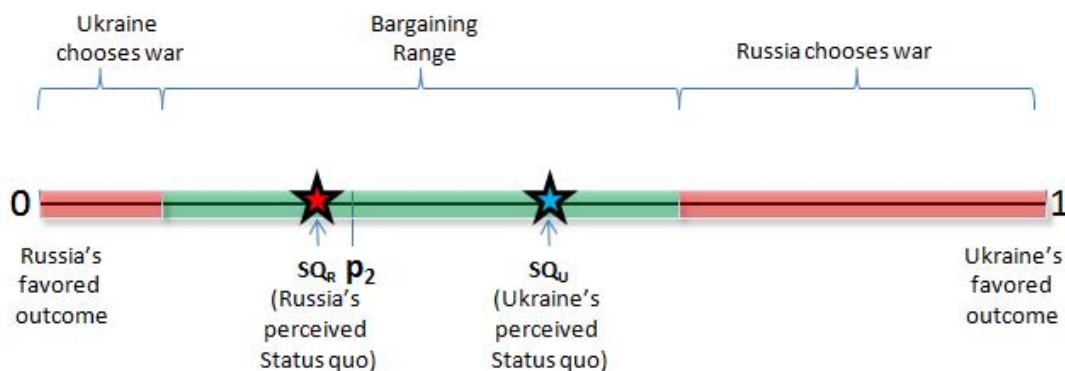


Figure 24. 1994—No Change in Russia's Status Quo Perception

B. THE 1994 PROPOSAL— X_2 (THE PROPOSED 1994 BARGAIN)

Figure 25 shows the shift in the bargaining range from 1992 to 1994. Realizing that it faced real security concerns and economic problems, Ukraine increased demands for security guarantees and financial assistance.¹⁷¹ Ukraine did not view these new demands as unreasonable, because the bargaining range had widened in their favor and their perception of status quo shifted. However, Russia refused to give money and security guarantees to Ukraine, which indicates that there was still a large divide in perception of the status quo between Ukraine and Russia. Both the United States and Russia rejected requests from Ukraine for an alliance. However, the United States referred Ukraine to the NPT, which stated that any non-nuclear state would have a friend in court if subject to nuclear blackmail or nuclear attack.¹⁷² The cognitive bargaining model predicts that Ukraine's initial offer in 1994 was destined to fail. At the same time, the cognitive bargaining model also clearly explains Ukraine's increased demands.

¹⁷¹ Garnett, lecture notes, 7.

¹⁷² George Bunn, "Strengthening Nuclear Non-Proliferation Security Assurances for Non-Nuclear-Weapon States," in *At the Nuclear Crossroads*, ed. John B. Rhineland and Adam Scheinman (New York, University Press of America: 1995), 50.

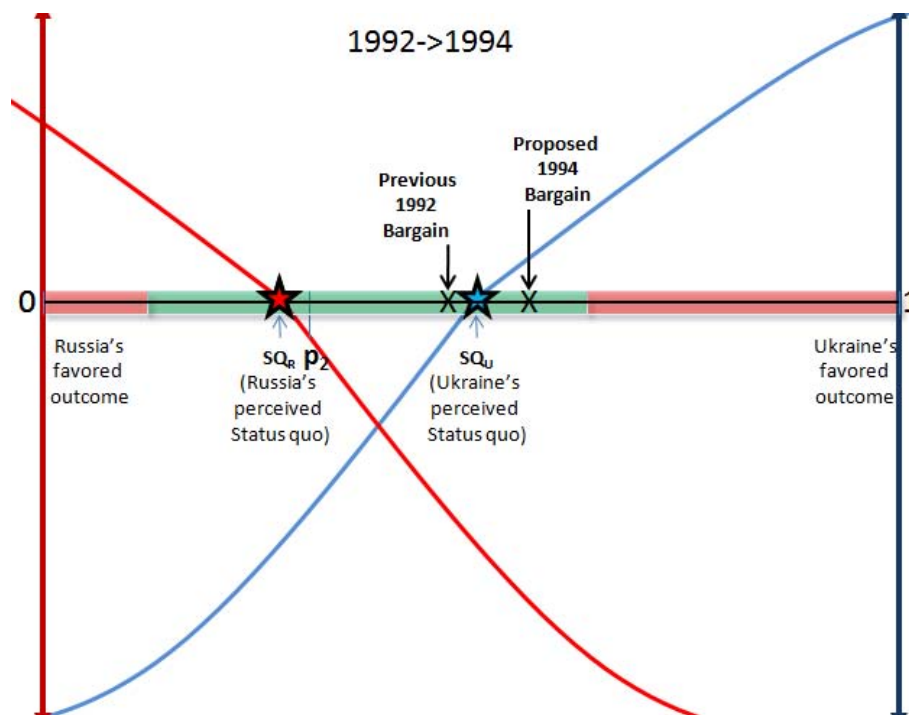


Figure 25. Proposed 1994 Bargain.

C. THE FINAL 1994 AGREEMENT— X_2 (THE FINAL 1994 BARGAIN)

Figure 25 showed the effect of Ukraine's status quo shift from 1992 to 1994. The previous bargain was now perceived as too little compensation in exchange for nuclear weapons. In other words, it was now seen as a loss by Ukraine. In a losses frame, prospect theory predicts that actors become risk acceptant. This explains why Ukraine aggressively increased demands for compensation while casting doubts on denuclearization efforts. Unlike 1992, when the incentives offered by the United States to Russia were crucial, in 1994, an increase in incentives offered by the United States were pivotal for Ukraine. The January 14, 1994 Trilateral Statement between the United States, Russia, and Ukraine represents the final bargaining agreement. Figure 26 shows the resulting settlement is shown on the cognitive bargaining model.¹⁷³ It is important to recognize that only increases in incentives are shown in the cognitive bargaining model

¹⁷³ Barylski, *The Soldier in Russian Politics*, 209–210.

for 1994 because existing incentives from 1992 were now part of the status quo. It is important to recognize that Russia did not secure any significant additional incentives as a result of the Trilateral Agreement.

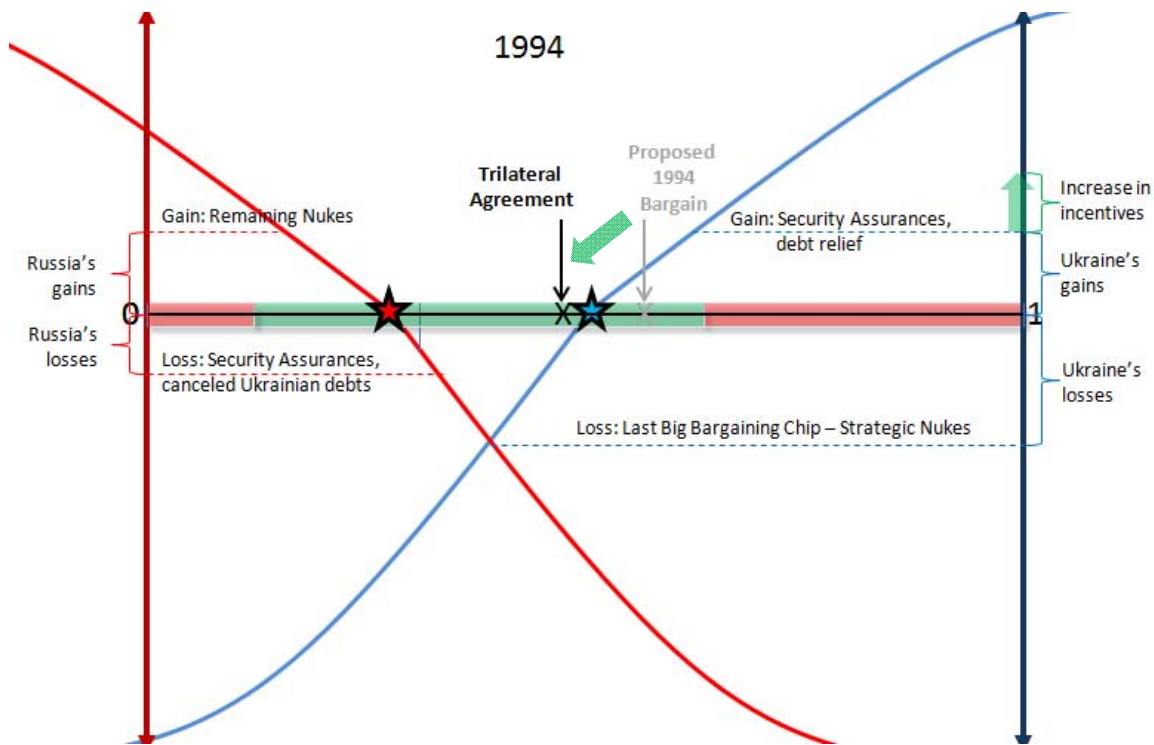


Figure 26. 1994 Bargain—The Trilateral Agreement.

Ukraine received nuclear fuel elements from Russia for its reactors, dismantlement assistance from the United States,¹⁷⁴ which doubled from about \$175 million to \$350 million, and security assurances from the United States and Russia.¹⁷⁵ According to the text of the Trilateral agreement, Russia and the United States agreed to “respect the independence and sovereignty and existing borders of the CSCE members states and recognize that border changes can be made only by peaceful and consensual means; and reaffirm their obligation to refrain from the threat or use of force against the

¹⁷⁴ Bee, “Nuclear Proliferation: The Post Cold-War Challenge,” 31–33.

¹⁷⁵ Sherman W. Garnett, “Sources and the Conduct of Ukrainian Nuclear Policy,” 145.

territorial integrity of political independence of any state...”¹⁷⁶ For incentives, Ukraine received \$350 million in economic aid and \$350 million in dismantlement assistance from the United States.¹⁷⁷ President Clinton gave an additional \$200 million extra to Ukraine in 1994.¹⁷⁸ It is also estimated that Russia cancelled up to \$900 million of Ukrainian debts.¹⁷⁹ The USAID mission to Ukraine gave over \$1.4 billion in grant assistance from 1994 to 2000, making Ukraine the world’s third largest recipient of U.S. foreign assistance.¹⁸⁰ Meanwhile, Ukraine gained \$356 million in financing assistance from the IMF in 1994, and an additional \$1.2 billion in 1995 and \$777 million followed in 1996, for a total of \$3.5 billion between 1994–1999.¹⁸¹ From 1991–1999, the European Union (EU) committed 422 million Euros, and the World Bank \$2.8 billion in loans, although less than half was probably distributed by both organizations.¹⁸² Meanwhile, Russia and Turkmenistan accepted the rescheduling of Ukrainian arrears and gas payments.¹⁸³ What Ukraine did not get were the security guarantees it had been requesting. The reductions to Ukraine’s requests were offset by the increases in aid and promise of security guarantees once denuclearization was complete. In return, Ukraine agreed to turn over its strategic nuclear weapons within three years, ratify the START I treaty, and join the NPT.¹⁸⁴ “In February 1994, Ukraine ratified the Start I treaty unconditionally and in November 1994, voted overwhelmingly to ratify the NPT”¹⁸⁵

¹⁷⁶ “Trilateral Statement by the Presidents of the U.S., Russia, and Ukraine,” Moscow, Russia, January 14, 1994, http://www.nti.org/db/nisprofs/russia/fulltext/Trilateral_statement_1994.pdf (accessed November 18, 2009).

¹⁷⁷ Jehiel, Moldovanu, and Stacchetti, “How (Not) to Sell Nuclear Weapons,” 814.

¹⁷⁸ Ibid.

¹⁷⁹ Ibid.

¹⁸⁰ Aslund, *How Ukraine Became a Market Economy and Democracy*, 89.

¹⁸¹ Ibid., 88.

¹⁸² Ibid., 89–90.

¹⁸³ Ibid., 90.

¹⁸⁴ Barylski, *The Soldier in Russian Politics*, 209–210.

¹⁸⁵ Bee, “Nuclear Proliferation: The Post Cold-War Challenge,” 31–33.

There is speculation that additional incentives may have been tied to the denuclearization agreement originally signed in 1994. For example, in June 1994, the EU signed a partnership with Ukraine.¹⁸⁶ Ukraine followed through on its end of the bargain, and on May 31, 1996, the last Ukrainian nuclear warheads were secured on Russian soil.¹⁸⁷ Shortly thereafter, a NATO-Ukraine charter was established in Madrid.¹⁸⁸ Also in 1997, Russia signed a “friendship and cooperation” treaty with Ukraine formally acknowledging the sovereignty of Ukraine’s borders for the first time.¹⁸⁹ By 1997, Ukraine had become the third largest recipient of U.S. aid, totaling near \$225 million in 1997.¹⁹⁰

This chapter explored the contrast between Ukraine’s 1994 bargain and the 1992 bargain. Ukraine’s offer was overlaid on the cognitive bargaining model. The proposed 1994 bargain was then compared to the final 1994 bargain. The cognitive bargaining model does a reasonable job of explaining Ukraine’s ever increasing demands between 1992 and 1994. It shows how the larger than necessary incentives offered to Ukraine in 1992 were a big reason for this increase in demands. More importantly, it explains that further incentives by United States were necessary for the success of the 1994 Trilateral Agreement. Furthermore,. By 1994, the incentives offered by the United States were crucial to gaining acceptance by Ukraine, and ultimately, guaranteed the subsequent denuclearization of Ukraine.

¹⁸⁶ Golopatyuk, *Ukraine’s Security Option in the New Europe*, 32.

¹⁸⁷ Thomas Bernauer, Stephan Brem, and Roy Suter, “The Denuclearization of Ukraine,” in *The Politics of Positive Incentives in Arms Control*, 111.

¹⁸⁸ Golopatyuk, *Ukraine’s Security Option in the New Europe*, 38–39.

¹⁸⁹ Mikhail A. Molchanov, *Political Culture and National Identity in Russian-Ukrainian Relations* (College Station: Texas A&M University Press: 2002), 105.

¹⁹⁰ Thomas Bernauer, Stephan Brem, and Roy Suter, “The Denuclearization of Ukraine,” in *The Politics of Positive Incentives in Arms Control*, 150.

V. CONCLUSION

Most people would agree that implementing an effective incentive strategy is a very difficult task. A realistic tool for analysis of expected results of incentives would certainly be helpful. This thesis proposes one possible solution. It is a cognitive bargaining model based on Fearon's bargaining and war theory. Prospect theory is folded in to create a model that uses the subjective utility functions along with perception of status quo to evaluate the effect of an incentive on either side of a bargaining situation. Additionally, an actor's expected utility calculation is changed to a perceived utility, which makes it possible to conduct an ex ante analysis. In addition, it is also possible to predict whether an offer results in an acceptable bargain. This is useful for determining whether a third party incentive achieves the desired effect. This thesis chose a case study to put the model to the test. The case of Ukraine's denuclearization in the 1990s was chosen because it best matched the assumptions of the cognitive bargaining model. By comparing Ukraine's bargain in 1992 to the bargain reached in 1994, strengths and weaknesses of the cognitive bargaining model were revealed. While the cognitive bargaining model has proven useful in the context of this thesis, it is important to not overlook the limitations, policy implications, and areas for future study. Determining when the cognitive bargaining model works well and when it may fail, can avoid misapplication and confusion over the model's predictions.

A. MODEL LIMITATIONS

This thesis attempts merge a cognitive theory with a rational theory, as Berejikian proposed is possible. Reworking a rational theory to account for cognitive decision-making effects is challenging. The reward is intellectual and situational insights into the choice of where to use incentives. However, do not forget that there are limitations. The cognitive bargaining model is limited in three ways: the breadth of application, challenges to coding the variables accurately, and inability to account for variations in incentive composition.

To begin with, the cognitive bargaining model is only good for analysis at one point in time. It does not handle multiple back and forth negotiations. The limitation on analysis is that the model must continually be updated with new information to maintain an accurate prediction. Evolution of cognitive bargaining theory into a Rubenstein bargaining model, or some other model that accounts for back and forth negotiations, may provide a mechanism to model real world bargaining processes more accurately.¹⁹¹ Another limitation is that the cognitive bargaining model breaks down if either side does not value compensation. If money has such little value to the actors in conflict, then the effect of incentives on the situation is marginalized. In this case, another instrument of power may be more beneficial. The cognitive bargaining model also only accounts for favored outcomes of two states. This limits its applicability to some bargaining situations in an ever-globalizing and interconnected world. The cognitive bargaining model does not work for analysis of institutional bargaining among large groups of states within a context, such as the United Nations.

Next, placing variables into the cognitive bargaining model also presents difficulties. The case of Ukraine's denuclearization highlighted this problem. Analyzing expected utility based purely on capabilities is relatively straightforward, but subjective utility requires analysis of the decision maker and their perceptions. Although a third party may gain access to this information easier than a direct adversary, it is still difficult to obtain reliable information. Also, the cognitive bargaining model adds independent variables to Fearon's bargaining and war theory. Adding additional independent variables takes away from the parsimoniousness of Fearon's model. One of the additional variables especially difficult to determine is the perception of status quo. This is exacerbated in the case study of Ukraine in 1992 by a major shift in world politics caused by the fall of the Soviet Union. The status quo must lie somewhere between the bargain offers and the red lines for war. However, this is still a large range of uncertainty. When the status quo is long-standing, it is easier to determine. However, even when the status quo is easily determined, the slope of the subjective utility lines is also difficult to establish

¹⁹¹ Ariel Rubinstein, "Perfect Equilibrium in a Bargaining Model," *Econometrica* 50, no. 1 (January 1982): 97–109.

objectively. Additionally, the slopes of the gains and losses functions vary based on the weight each actors puts on each bargaining chip. This requires a comprehensive view of all the bargaining chips on the table.

Finally, the cognitive bargaining model does not account for variations in incentive packages. In other words, the way an incentive is packaged and offered may very well determine its value in the eyes of the target states. The model does not guarantee that the policy makers construct the incentives in a way that ensures success. Another variation is each side may not value incentives the same way. If a state A views a particular incentive as lesser value than state B, this skews the analysis of where to input incentives as a third party. The model can account for variations in valuation of incentives by each side, but it requires the decision maker to delve a little deeper into the analysis.

The result of these limitations is that application of the cognitive bargaining model is not universal. Even though the cognitive bargaining model provides useful insights, it leads to incorrect conclusions if applied out of context. Decision makers must ensure that if using the cognitive bargaining model, the assumptions and limitations are well understood first.

B. POLICY IMPLICATIONS

The cognitive bargaining model represents a tool designed to help policy makers make the right decisions. Throughout this thesis, the analysis has revealed several implications of incentives and the application of incentive strategies. Incentives may have a significant effect in certain situations, and marginal effect in others. There are times when incentives are desirable, and when they are not. In general, there are six policy implications that result from the analysis presented in this thesis.

The first implication is that policy makers must start by asking the right questions. The questions and intelligence requests should center on determining the status quo and the perceived value of positive incentives for each of the states in conflict. The advantage of being a third party is that neither side has an incentive to misrepresent. This is true as long as the states in conflict are not aware that a third party is considering incentives.

Otherwise, the third party may run into misinformation designed to maximize an incentive payoff. However, within the cognitive bargaining model, there is a chance of detecting this possibility. Once the status quo and perceived value of positive incentive is known, the subsequent analysis is based on a solid footing. The situation should be coded as a win-win, neutral, or lose-lose. It is important to understand the perception of status quo first before recommending an incentive strategy.

Second, incentives should not be used if the bargaining situation is a win-win or even neutral scenario. In this case, the United States is best used as a mediator to facilitate an agreement that falls within the win-win range. Additionally, policy makers should continually strive to find solutions where a hidden win-win may occur. If each side trades a bargaining chip they value less for one that each value more, it could also avoid unnecessary offers of incentives.

Third, all factors equal, a third party achieves more “bang for the buck” by influencing one side to back off on its quest for gains. The summed effect is greater than trying to compensate for a perceived bargaining loss. When a state is in the losses frame, prospect theory predicts they are more risk acceptant. This translates into more costly offers of incentives. Figure 10 best illustrated this implication.

Fourth, when possible, avoid letting incentives become the status quo. The case study of Ukraine illustrated how once incentives became a part of the status quo, the demands for further money increased. This was also due to the observation of how much money the other side (Russia) received. A third party should consider keeping offers of incentives private until the desired policy objective is achieved first. This helps avoid incentives as becoming perceived as status quo, and prevent incentive envy by the state that received less or no money.

Also, even though it is attractive to use offers of incentives to hedge toward an agreement, be cautious about over incentivizing. Certainly, there are specific policy areas, such as nuclear non-proliferation, where risking failure is not an option. Even so, over-incentivizing is likely to lead to extortion.

Finally, if policy makers want to use incentives, consider the enabling conditions. It is possible to influence the need for incentives by altering a state's perception of the status quo. In the case of Ukraine and Russia, both states had a high desire for monetary compensation. One could potentially lay the groundwork for incentives by increasing economic pressure prior to an incentive offer. An increase in perceived value of incentives means that a third party could achieve greater effects. Some of the harder forms of power could be used in conjunction with incentives. If the status quo contains the expectation of punishments, then the removal of the punishment, along with an offer of monetary compensation, is even more attractive than the money by itself. Information campaigns may also be used to frame the discussion around a given conflict and influence the perception of the status quo by one side or another. The bottom line is that incentives should never become the only option. Policy makers should consider ways of enhancing incentives, when politically feasible. Enhancing the attractiveness of incentives by influencing the perception of status quo and framing the issues surrounding a conflict helps save valuable resources.

C. FOR FUTURE STUDY

Although this thesis attempts to merge rational choice and cognitive theory, it is not without potential flaws. Reworking a rational theory to account for cognitive decision-making effects is difficult. It is recommended that future efforts focus on determining more accurate coding methods for the variables, expand the model to account for mixed influence strategies, and conduct further testing.

Ukraine's denuclearization highlighted the difficulty of coding perceptions into variables. It is more difficult than analyzing expected utility based on pure capabilities. There is a lot of room for subjective interpretation. If it is possible to develop the right operational proxies for the variables contained in the cognitive bargaining model, it can enhance the ability to conduct an objective analysis.

This thesis focused the cognitive bargaining model on application of third party incentives. However, a combined strategy of incentives and disincentives also has a potential for success. It may be possible to analyze both sanctions, as well as incentive

effects within the cognitive bargaining model. Further expansion of the cognitive bargaining model may allow for a more comprehensive view of influence strategies.

Finally, the cognitive bargaining is not fully tested. One case study with permissive conditions for the model is hardly sufficient. Although the Ukraine case study was promising, it does not fully validate the cognitive bargaining model. Further research and testing should focus on validating the predictive capability and determining any critical logic failures.

In conclusion, as the United States moves from a strategy more focused on punishment to one focused on engagement, positive incentives are likely to take on an increased role in foreign policy. The incentives recently offered by the Obama administration to the regime in Sudan are a shadow of what may become a more common approach. However, this does not mean that incentives are right for all situations. A tool for when to use incentives as a third party would be a powerful tool in the hands of policy makers. This thesis proposes a cognitive bargaining model designed for ex ante analysis. Although not without limitations, the cognitive bargaining model is an attempt at merging academic theory into a relevant policy making tool. On such merit, it deserves consideration for more research and study. Snyder and Diesing in *Conflict Among Nations* said,

Whether to be firm or tough toward an adversary...is a perennial and central dilemma of international relations. A rational resolution of this dilemma depends on an accurate assessment of the long run interests and intentions...Conciliation of specific grievances may be cheaper than engaging in a power struggle.¹⁹²

As the United States moves forward, blindly offer incentives to state or non-state actors with the hope of achieving a policy outcome is not a good idea. The cognitive bargaining model provides a tool for accurate assessment that helps minimize the central dilemma of international relations, while preserving the U.S.' limited national treasure.

¹⁹² Stanley E. Spangler, *Force and Accommodation in World Politics* (Maxwell Air Force Base: Air University Press, 1991), 186, in *Conflict Among Nations: Bargaining, Decision Making, and System Structure in International Crises*, ed. Glenn H. Snyder and Paul Diesing, (Princeton, N.J.: Princeton University Press, 1977), 254.

By learning to do this right now, historians may look back some day and remark how the United States effectively applied its instruments of “Smart Power” to achieve a better world in the 21st century.

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