Understanding Russian Aggression Towards Georgia:

An Expected-Utility Approach[5]

Michael J. Langlois[6]

Abstract

Did Russia initiate conflict with Georgia in an attempt to restrain Georgia from formally joining the Western coalition, or was the decision more complex? What did Russia hope to gain from initiating conflict? What value did Russia assign to maintaining an interest in regional oil trade routes, in which Georgia straddles an important route to the Caspian Sea region? How was the potential incorporation of Georgia into NATO factored into Russia's decision? To answer these questions, I used the expected-utility model developed by Bruce Bueno de Mesquita. In this analysis, policy preferences and power measurements were considered to determine that Russia's decision was rationally selected based on a positive expected-utility calculation. I attempted to explain whether this model's explanatory and predictive capabilities could accurately elucidate Russia's conflict decision. Furthermore, within the context of the expected-utility model, what can we expect about Russian-Georgian relations in the future?

Introduction

The primary research question of this study was derived through an interest in the Russian-Georgian conflict of 2008. Was Russia's decision to initiate conflict with Georgia rationally based on a positive expected-utility calculation? Since the decision process of the Russian leaders cannot be known for sure, the underlying question is if Russia had a positive expected-utility and therefore could have been expected. Fundamentally, then, this study is a test of the expected-utility theory and its usefulness in understanding contemporary conflicts between states. A positive expected-utility is a necessary, but not a sufficient condition for the decision to initiate conflict if the decision is rational (Bueno de

Mesquita, 1981: p.182). For this statement to hold true, there are five assumptions detailed in *The War Trap* by Bueno de Mesquita that I will explain in the literature review.

Theoretical Foundations – Literature Review

The seminal study on expected-utility theory was by Bueno de Mesquita in 1981 called *The War Trap.* Bueno de Mesquita believed that he could develop a theory that accounted for conflicts explained by other theories, while at the same time able to account for the anomalies past theories could not. I believe that Bueno de Mesquita's work builds upon the neo-realist paradigm of Ken Waltz. Bueno de Mesquita proposes that his theory accounts for the necessary, but not the sufficient conditions for war. In addition, Bueno de Mesquita's work is unique since the calculation of expected-utility is from the perspective of a single leader.

Mesquita complains about the vast array of plausible, but mutually contradictory hypotheses about the causes of war. It is Mesquita's hope to deliver a comprehensive theory about the conditions for war. For example, Mesquita argues that many other theories are pieces to a greater puzzle that have yet to be put together into a coherent general theory. Mesquita clarifies his arguments by detailing two assumptions that are too commonly relied upon and are wrong. The first assumption that he disagrees with is the notion of a world community of nations. The second assumption that he disagrees with is the argument that states are actors themselves. According to Mesquita, leaders of nations are the actors; however, without that distinction between state and leader "most theorists implicitly assume that all decision makers share the same propensity to take risks" (Ibid. 1981, p.11). Mesquita goes on to argue that "treating individuals with such diverse attitudes toward risk as if they follow the same rules of decision making so misrepresents reality that logically and historically incorrect generalizations are bound to result" (Ibid. 1981, p.12).

Although there is an obvious departure from structural realism, Mesquita does agree with Waltz's analysis of the international system. For instance, at a fundamental level Mesquita's work agrees with Waltz on the notion of an anarchic international system. Furthermore, Mesquita agrees with the state centrism assumption in that states are the most important entities; however, he deviates by focusing on the leadership decisions of those states. The rationality assumption is clearly the basis of where Mesquita's theory comes from as he contends leaders are rational utility maximizers. Mesquita also agrees with the power assumption since a state's strength is a core component of the expected-utility figure, especially in bilateral conflicts. As a result, I argue that Waltz would classify

Mesquita within the third image level of analysis. I believe a first image categorization would not be correct since Mesquita does not argue that human nature is the reason for war. Instead individuals determine their behavior through an amoral expected-utility calculation with other states. A second image classification is also incorrect because Mesquita does not designate between good and evil states. Instead, Mesquita, like Waltz, sees an anarchic international system where each state secures its own safety. I also argue that Mesquita's theory is in line with Waltz's elements of system structure. Each state calculates its own expected-utility without interference from other states. At least at the international level, states perform the same functions as in the unit functional homogeneity argument. Similar to Waltz, Mesquita's theory places importance on the distribution of capabilities between states.

Expected-Utility Model Foundation

The foundation of Mesquita's expected-utility model can best be explained when Mesquita states that "we rarely think of the planning and calculating that precedes the battle. Yet for all the emotion of the battlefield, the premeditation of war is a rational process consisting of careful, deliberate calculations" (Ibid. 1981, p.19). Mesquita is arguing that war does not occur by accident. According to Mesquita, war is "premeditated," where military actions do not occur by chance. The determinants of the size of expected gains or losses of going to war depend on the following three aspects: The relative strength of the attacked and the defender, the value the attacker places on changes in policies that the attacker may be forced to accept if it loses, and the relative strength and interests of all other states that might intervene in the war. These three aspects are at the foundation of Mesquita's calculation of expected-utility.

Mesquita's expected-utility model is broken down between bilateral wars and multilateral wars. "In a bilateral war, success affords one [country] the subsequent opportunity to influence the policies of the adversary, making them more consistent with one's own interests" (Ibid. 1981, p.46). In other words, this is what success means for the winner of a bilateral war. Mesquita defines bilateral wars as "pure competition" mechanisms, which means under bilateral conditions, there is a zero-sum game. Essentially, country A's losses are country B's gains, and vice versa. Moreover, Mesquita argues that the expected-utility calculation in a bilateral context is solely determined by the relative power differences between the two states. In multilateral interactions, Mesquita

uses a complex expected-utility calculation that includes the proportional utility contributions of supporting states into the basic bilateral calculation. Items such as the intensity of support from other states matters, and the level of risks are considered by Mesquita to determine the actual values of utility.

Mesquita lays out some expected-utility decision rules which are logical extensions of his basic theory. First, an attacking country must derive a net gain in utility by initiating the conflict; otherwise it would irrational to attack if you would lose utility. Second, Mesquita argues that risk-acceptant and risk-neutral decision makers should be expected to meet the necessary conditions for war more often than risk-averse decision makers. This makes sense because by nature a risk-averse person would avoid risky situations, and would need to receive a higher expected-utility to initiate conflict.

Mesquita clearly lists five assumptions of his expected-utility theory. I adopt only the first two assumptions into this study for reasons I will explain later. The first assumption is that war decision making is dominated by a single, strong leader. The second assumption is that leaders are rational expected-utility maximizers. The third assumption is that the differences in leaders' orientations toward risk taking influence decision making. The fourth assumption is that uncertainty about the likely behavior of other states in the event of war affects decision making. The fifth assumption is the power a state can use in a war declines as the site of the war becomes geographically distant from the nation.

In the expected-utility model Mesquita operationalizes utility as a direct, positive function of the degree to which they share a common policy perspective. Furthermore, utilities are determined by the congruence of policy ends between states. In fact, Mesquita states that the "expected utility of the war strategy is simply the sum of the utilities of the possible outcomes times their probabilities" (Ibid. 1981, p.36).

Assumptions

In addition to the first two assumptions by Bueno de Mesquita, I propose that the Russian-Georgian conflict should be treated as a bilateral conflict. I believe that Russia did not expect other nations to intervene militarily, since at first it was a minor conflict. The conflict itself arose from people living in South Ossetia and Abkhazia who wanted to rejoin with Russia. Georgia's decision to reincorporate those separatists caused Russia to intervene to aide their loyalists living in Georgia. When Russia made the decision to broaden the conflict and invade the Georgian capital, however, Russia was met with

international pressure to stop. The decision to broaden the conflict, however, is the decision I examine with the expected-utility model.

By assuming bilateral conflict, I will not include the following three variables from The War Trap: loss of strength gradient, risk, and uncertainty. The loss of strength gradient variable will not be used since Russia and Georgia border each other and therefore the loss of strength gradient is zero. Risk and uncertainty will not be considered since both variables are used in multilateral expected-utility calculations only (Bueno de Mesquita 1981: p.122 – 25).

Proposition

The proposition in this study examines the contention that Russia wanted to maintain its reputation in the region. I argue that Russia had a direct interest in preventing the Georgian government from forcefully reincorporating South Ossetia and Abkhazia. Russia may have feared a setback in regional influence and may have believed that Georgia's actions could embolden other former Soviet republics like Ukraine to oppose Russia. Even more, Russia may fear that former Soviet nations could join NATO. This fear is not unfounded as NATO has promised to add Georgia as a member nation at a later date. Also, Russia wants to control the oil pipeline that runs through Georgia from the Caspian Sea to the Black Sea, which bypasses Russian authority. It is possible that Russia, in an attempt to maintain its influence and reputation in the region, attacked Georgia as an example for other former Soviet nations.

Hypothesis

The hypothesis of this study tests whether or not Russia had a positive expected-utility when conflict began:

H1: Russia had a positive expected-utility calculation when it decided to initiate conflict with Georgia.

Data and Methods

I have chosen to examine the hypotheses and research questions outlined above with an available data type study. The data used in this study came from the Correlates of War (COW) dataset for country capabilities, and from the United Nations Treaty Series (UNTS) database for country relationship information.

UNTS Database

The UNTS database was used instead of data on formal military alliances from the COW alliance database[7]. UNTS is an online searchable database that maintains records on all formal relationships between two countries that were registered with the United Nations. Each relationship is coded with a unique registration number, and in most cases a link to the full-text document is available. This database allows quick and up-to-date access to data which can be used to examine contemporary conflicts when other data is unavailable. Even more, the UNTS is ideal for small scope projects since you can easily modify the search criteria to your specifications. The data retrieved from the UNTS database included all treaties and agreements which Russia and Georgia were involved in. There were a total of 59 individual relationships, which could be reduced to 31 unique cases because of redundant agreements between the same countries within the same years. For example, in 2008 Russia made two agreements with Latvia on the same day, therefore it was counted as one agreement between Russia and Latvia in 2008. These 31 cases were used to estimate the level of congruence in policy preferences between Russia and Georgia.

COW Dataset

Composite Index of National Capability (CINC) scores from the COW database were used to estimate military power and thus the probability of a win or loss relative to the other country. As Mesquita explains, the CINC scores are calculated by incorporating the proportion of "three theoretically distinct dimensions of national capabilities: military, industrial, and demographic" (see Singer, Bremer, and Stuckey, 1972; Bueno de Mesquita 1981, 1992; Bennett and Stam, 2004).

Expected-Utility Calculation

The key factors of the expected-utility model are shown below in Table 1. These factors in the model were derived from *The War Trap*. Although I use different sources for data, the equation and the factors that comprise the model remain the same. The

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[7] I will explain how I operationalized this source and used it to measure utility, or policy congruence, when I discuss independent variables.

interpretation of two of the key factors should be explained further: tau-b and $E(U_{ij})$. Tau-b can be interpreted as the magnitude of the relationship between two countries. The range of values for tau-b is from -1.0 to 1.0. In this study, the magnitude of the relationship signifies the level of agreement in terms of policy preferences between Russia and Georgia. $E(U_{ij})$ or the expected-utility country (i) has for country (j) represents the value assigned to the amount of gain or loss from war or peace respectfully. In other words, a positive expected-utility means that conflict is likely to result in favorable gains in terms of realigning the defeated country's policies to match your own (Bueno de Mesquita, 1981). The expected-utility equation used in this study is listed just below Table 1.

Table 1: Expected-Utility Key Factors

	Utility	Probability	Expected-Utility
Interpretation	Policy preference congruence	Power, Likelihood of victory/defeat	Value gained from victory/defeat
Statistic	Kendall's tau-b	CINC score	$E(U_{ij})$*, Expected-Utility of Russia (i) to Georgia (j)

* $E(U_{ij}) = P_i * (1-U_{ij}) + (1-P_i) * (U_{ij} - 1)$ (Bueno de Mesquita 1981: p.47, eqn 1)
where, $U_{ij} = tau_{(i, j)}$, and where $P_i = raw\_cap_{ij}$ or CINC score (Singer, et al., 1972)

Temporal and Spatial Domain

The temporal domain for this study runs from 1998 to 2008; however it is focused on the Russian-Georgian conflict in 2008. In its original conception, expected-utility calculations were derived from the policy preferences and power capabilities in the form of CINC scores of two states during the year leading up to the conflict until three months prior to the military action (Bueno de Mesquita, 1981: p.114). Since formal alliance data and CINC scores are only available until 2000 and 2001 respectfully from the Correlates of War project (COW), I have adjusted the temporal domain of the study. For reasons that will be explained in the independent variables section, I found it necessary to include relationships over the past ten years.

The spatial domain for this study includes the countries of Russia and Georgia. These countries have had a long history of stressful relations over both the Russian separatists living in Georgia and over the potential incorporation of Georgia into NATO. Focusing on a single conflict between the two countries in 2008 is admittedly narrow and will not offer much in terms of generalizability. Such a narrow study, however, is the only reasonable way to test an expected-utility theory of a contemporary conflict when the data

is not available. The selection of the two countries is interesting because the analysis is a test of the expected-utility theory.

Dependent Variable

The dependent variable is the decision to initiate conflict or not. In this study, the only dependent variable of interest is if Russia chose to initiate conflict with Georgia. Obviously Russia did initiate a conflict with Georgia, but this study is an attempt to find if that initiation decision was based on a positive expected utility calculation.

Independent Variables

Utility: The concept of utility in the context of this study refers to the level of policy preferences congruence between Russia and Georgia. Policy congruence, as first conceptualized in *The War* Trap, is measured by formal alliance agreement between two countries. Since formal alliance data is only available until 2000 from COW, I have conceptualized a surrogate measure of formal relationships using data from the UNTS database. Therefore, I operationalized utility by calculating how related the sets of relationships are between Russia and Georgia using Kendall's tau-b. I have coded the relationships in the UNTS database as either an "Agreement" or a "Treaty", or 1 and 2, respectfully. Treaties include all formal treaties between two or more countries. Agreements include all economic and political agreements between two or more countries. Since there can be three distinct ordered classifications (Treaty, Agreement, or No Formal Relationship) the variable is ordinal. As a result, if there is a Treaty and an Agreement within the same year with the same member countries, then only the Treaty was counted since it is a stronger relationship.

The decision to use a substitute measure for formal alliances was based *The War Trap*, where he explains his wish to include other measures of utility rather than only formal military alliances in future small scope projects (Bueno de Mesquita, 1981: p.114). For instance, relationships such as economic integration and other political agreements could be considered (ibid, p.115). I have accounted for all relationships that either Russia or Georgia are involved in that were registered with the United Nations from 1998-2008. Expected-utility scores were calculated between Russia and Georgia from 1998–2006 and from 2007-2008. Since the conflict occurred in 2008, I argue that the policy preferences during the 2007 and 2008 are relevant to understand the decision for conflict.

Probability: The independent variable of probability in this study refers to a country's power and the likelihood that the country will win a conflict. To estimate this probability, CINC scores have been used as a measure of power. These CINC scores, however, are only available until 2001 from the COW project's alliance database. As a result, I have averaged the CINC scores for Russia and Georgia for the ten years leading to 2001. The notation (P_i), as seen in Table 1, represents the probability of a win or Russia's CINC score for Georgia. Similarly, $(1-P_i)$ represents the probability of a loss. As the founders of the COW project point out, there are some problems with conceptualizing power in terms of a standard score, "various caveats must be made concerning the validity of the indicators the project selected; the first of these is comparison, which relies on the sometimes questionable assumption that equal values of the same indicator make equal contributions to capability" (Singer, Bremer, and Stuckey, 1972).

Findings

The policy congruence between Russia and Georgia is best summarized in the form of contingency tables and is shown in Table 2 and Table 3. The country abbreviations were adopted from the COW project. The relationships in these tables exist between either Russia or Georgia and other countries. In addition, the relationships represented are all bilateral in that there is a direct connection between two of the countries. Where Russia and Georgia agree, with Finland in table 3 for example, it means that both Russia and Georgia have a unique relationship with Finland during the 2007–2008 timeframe. Kendall's tau-b, which is indicated below both Table 2 and 3, represents the magnitude of congruence. As explained earlier, there are two represented time frames: 1998–2006 and 2007–2008. It is interesting to note that from 1998 to 2006 Russia and Georgia had no relationships in common, and thus the tau-b or utility value was -1.000. In other words, Russia and Georgia had completely different policy preferences. From 2007 to 2008, Russia and Georgia had five relationships in common, which reduced the magnitude of the negative relationship indicated by the tau-b or utility value of -0.420. Either way, Russia and Georgia have very divergent policy preferences.

Table 2: Congruence of Interests between Russia and Georgia 1998 - 2006

1998 - 2006	Georgia		
	No Formal Relationship	Agreement	Treaty
Russia — No Formal Relationship			GMY, FRN
Russia — Agreement			
Russia — Treaty	BLR, KYR, KZK, BEL, CZR, BRA, IRN, PAR, USA, KOR		

* Kendall's tau-b= -1.000, sig. = .053, N = 12

Table 3: Congruence of Interests between Russia and Georgia 2007 - 2008

| 2007 - 2008	Georgia		
	No Formal Relationship	Agreement	Treaty
Russia — No Formal Relationship		TUR, EST, ISR	UKR
Russia — Agreement	ARG, AUL, FRN, NEW, UKG, NOR, POL, SAF	USA, FIN, LAT	GMY
Russia — Treaty	MEX, VEN	KZK	

* Kendall's tau-b = -.420, sig. = .021, N = 19

Another interesting note is that Russia and Georgia have no treaties in common. Do strong formal ties like treaties mean that countries are less likely to attack? If so, is the lack of treaties in common a factor that lead to the Russian-Georgian conflict? Although formal testing of this idea is beyond the range of this study, it does add to the strength of using an expected-utility model to examine conflict decisions since common treaties are lacking in the Russian-Georgian context.

Over time there was an increase in the number of dissimilar relationships between Russia and Georgia leading up to the conflict in 2008 (see figure 1). Since the last conflict between Russia and Georgia in 2002[8], Russia and Georgia had continually added dissimilar relationships. This could be interpreted to mean that since 2002, Russian and Georgian policy preferences have continually diverged. Even more, from 2006 to 2008 Russia and

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[8] Related to the Chechen rebels and was coded by the International Military Intervention dataset as a conflict (see Kingasani and Pickering 2008).

Georgia increased the number of dissimilar relationships from 12 to 26. Of the five similar relationships that were added from 2006 to 2008, three were either economic or environmental in nature while only two were strong political relationships. The trend of increasingly dissimilar relationships paints a clear picture that diverging policy preferences were building up until the conflict in 2008.

Figure 1: Accumulated Level of Policy Congruence between Russia and Georgia
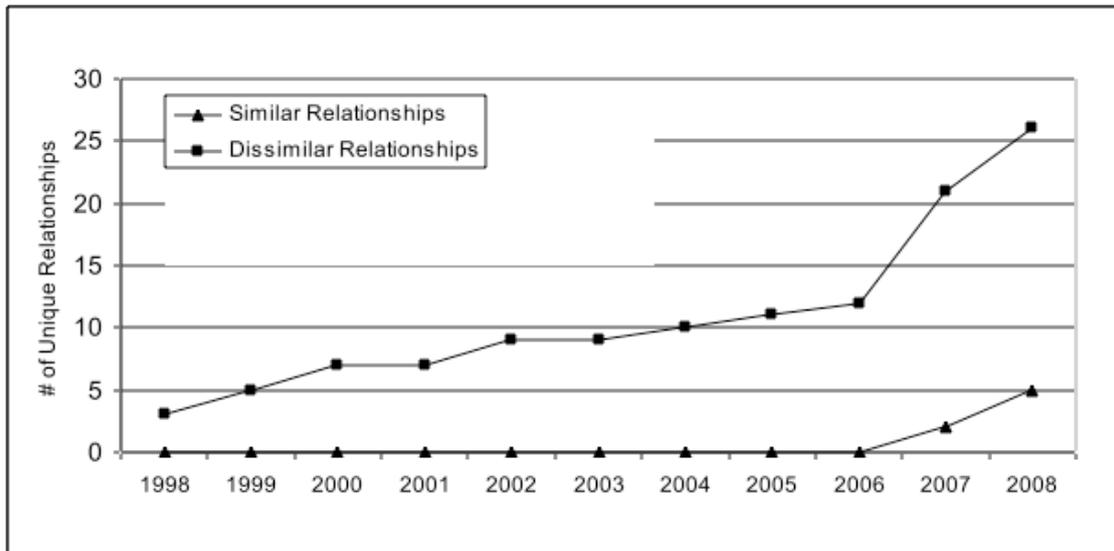
The expected-utility scores calculated based on the model explained earlier are represented in Tables 4 and 5 below[9]. So, from 1998 to 2006 Russia expected to gain a utility value of 1.962 if it succeeded in a conflict with Georgia. Similarly, from 2007 to 2008, Russia expected to gain a utility value of 1.393 if it succeeded in a conflict with Georgia. These numbers only explain that since Russia had a positive expected-utility in both timeframes, a conflict initiation with Georgia would be rational in strictly cost-benefit terms. By looking at Figure 1 again, however, we see that the trend of increasingly dissimilar relationships really tell the story of the conflict in 2008. It is worth noting that during the overall time period from 1998 to 2008, Russia maintained a positive expected-utility[10].

Table 4: Expected-Utility Scores 1998 - 2006

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[9] Note that since risk, uncertainty, and loss of strength are not factored into this study (since it is being viewed as a bilateral conflict) the expected-utility for Georgia is simply the opposite of Russia's expected-utility.
[10] Overall 1998 – 2008:   Kendall's tau-b = -.617, sig. = .000, N = 31, E (Uij) = 1.586

1998 - 2006	Utility	Probability	Expected-Utility
Russia (i)	-1.000	0.99	E(Ui) = 1.962
Georgia (j)	1.000	0.01	E(Uj) = -1.962

Table 5: Expected-Utility Scores 2007 - 2008

2007 - 2008	Utility	Probability	Expected-Utility
Russia (i)	-0.420	0.99	E(Ui) = 1.393
Georgia (j)	0.420	0.01	E(Uj) = -1.393

These findings, therefore, do support the hypothesis that Russia did have a positive expected utility when it decided to initiate conflict with Georgia. In other words, Russia's decision to initiate conflict with Georgia to stop the reincorporation of the Russian separatists was rational in a strictly cost-benefit sense.

Discussion

The proposition in this study appears to be supported, but in no way is proven by this single study. The proposition about Russia's reputation seems like a plausible explanation for the conflict. Russia may have feared other former Soviet nations could be emboldened if Georgia was allowed to suppress the Russian separatists. Even more, defiance in the face of Russia could also encourage the former Soviet nations to consider joining NATO. It is also possible that Russia had an economic, as well as, a security interest in the oil route running through Georgia by maintaining Russian loyalists living in Georgia. Did Russia attack Georgia for these reasons? Although the answer could be yes, it would take additional studies about the region and the relationships of former Soviet nations with Russia for a clearer picture. An elaborate game theoretic model may help to explain the relationship between Russia and Georgia and the decisions that led to conflict in a future study.

Finally, when data from the COW dataset becomes available through 2008, it would be interesting to compare my results using UNTS with results using COW alliance data. If they provide similar results, then the use of UNTS could be justified for other

contemporary conflict studies using expected-utility when traditional data sources are not yet available.

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