

**Prospect Theory and the Punic Wars**

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### ABSTRACT

This paper will utilize the decision board software developed by Alex Mintz to analyze a political decision made over 2,200 years ago. After losing the first Punic War to Rome 20 years earlier, when tensions flared again, Hannibal Barca responded with his legendary crossing of the Alps to bring the war to Italy. I propose to recreate this decision and test the ability of prospect theory to predict its outcome. Assuming that Hannibal was operating in the domain of loss would explain his decision to adopt the risky alternative of invasion. If the scenario is adequately framed so that a position in the domain of loss is perceived, prospect theory would predict that 21<sup>st</sup> century test subjects should make the same decision as Hannibal. Likewise, altering the scenario to remove Hannibal from the domain of loss and place him in a domain of gain would predict that the test subjects should alter their decision accordingly.

### Introduction

Since its introduction as an alternative to expected-utility as a theory of decision making (Tversky & Kahneman, 1981; Levy, 1992), prospect theory has been applied to the fields of international relations, comparative politics, economics, and the law (Mintz, et al, 1997; Levy, 2003). While questions regarding its effectiveness have been raised recently (Levy & Levy, 2002), prospect theory continues to receive analysis in the literature and is successful in helping us understand the process behind decisions, and the effects of situation framing on their outcomes.

One glaring discrepancy among the research into prospect theory is its application to historical decisions that occurred greater than ~50 years ago. The purpose of this research paper is to test the ability of prospect theory to provide explanatory reasons behind the decision of Carthaginian general Hannibal Barca to invade the Italic peninsula during the Second Punic War in 218 BC. By recreating his decision twice, the first time leaving the historical facts unaltered, and framing Hannibal's position as being in a domain of loss, and the second time "altering history" to place him in a domain of gain, I expect to see significant differences in the choices made by modern-day test subjects.

I will first give a brief overview of the conditions leading up to and encompassing the beginning of the Second Punic War, to provide a basis for my argument that Hannibal was in fact in a domain of loss (or at least, he perceived himself to be in a domain of loss, thus framing any decision from that perspective). Following the survey of the Punic Wars, I will examine the salient features of prospect theory, and its application to this particular historical situation. Finally, I will conclude by describing the experiment – its structure and procedure – and attempt to apply those results to the historical situation.

### Historical Scenario

The conflict between Rome and Carthage that ultimately expressed itself in three major wars had long roots. Both sides, it seemed, realized the import of the struggle, and seemed to have felt that the western Mediterranean was only big enough for one major power. Polybius goes even further in his analysis of the situation:

Now in earlier times, the world's history had consisted, so to speak, of a series of unrelated episodes ... but from this point onward history becomes an organic whole: the affairs of Italy and Africa are connected with those of Asia and of Greece, and all events bears a relationship and contribute to a single end... For it was after their victory over the Carthaginians in the Hannibalic War that the Romans came to believe that the

principal and most important step in their efforts to achieve universal dominion had been taken, and were thereby encouraged to stretch out their hands for the first time to grasp the rest, and to Cross with an army into Greece and the lands of Asia (Polybius, 1979, I.3).

In order to understand what brought these powers into conflict, some background information is necessary. Rome and Carthage had enjoyed a formal relationship since only a year after the founding of the Roman Republic in 507 BC. Polybius records a treaty that was enacted in 508 that is worth noting. It begins emphasizing the friendly relations between the two states: “There shall be friendship between the Romans and their Allies and the Carthaginians and theirs on these conditions” (Polybius, 1979, III.22): and the conditions, summarized, are as follows:

- The Romans could not sail west past a North-South line to trade with western European and African cities.
- All business done in Carthage must be done in the presence of a Carthaginian official.
- Roman citizens in Sicily are to be extended equal rights with the Carthaginian Citizens.
- The Latin cities allied to Rome in Italy are protected from Carthaginian conquest, plunder, and territorial ambitions.

At this point in the late 5<sup>th</sup> century BC, the Carthaginians seem to be in a position of power in the negotiations. Founded by the Phoenecians in the 8<sup>th</sup> century BC, Carthage by this point controlled much of North Africa and the Western Mediterranean, while Rome still didn’t even have the entire Italic peninsula under its control. Both parties, however, came to a mutual understanding in regards to Sicily. The prohibition on Roman sailing past agreed lines served two Carthaginian interests: it prevented economic loss to Roman trading vessels and also prevented Rome from military exercises in the area: raids, colonization, etc.

Polybius details a second Roman-Punic treaty very similar to the first, with the only substantive difference being the addition of a new “no-sail zone” for the Romans in the western Mediterranean. These two early Roman-Punic treaties were beneficial to both sides; Carthage’s interests lying more in the economic realm, their primary concern seemed to be preserving their trade monopoly with Africa and the western Mediterranean. Rome, as a newer, still expanding power, was more interested in land acquisition and preventing Carthage from establishing a foothold in Italy proper. These treaties effectively served both parties interests without causing any great hardship on either one.

The third and final Roman-Punic treaty to which Polybius draws our attention was drafted at the time Pyrrhos had invaded Italy, and Rome for the first time (but not the last) was fighting a foreign enemy on its own soil. Pyrrhos was both Rome and Carthage’s enemy; thus the treaty allows for a mutual defense against any further attacks — but attacks by Pyrrhos only, this was not a general defensive treaty:

If the Romans or the Carthaginians make a written alliance against Pyrrhos ... they may help each other in the land of the party on whom he is making war. Whichever party may need help, the Carthaginians shall provide the ships both for the transport and for operations, but each shall provide the pay for its own men. The Carthaginians shall also give the Romans help by sea if need arises, but no one shall compel the crews to disembark against their will (Polybius, 1979, III.25).

This was the situation leading up to the First Punic War in 264 BC. The direct cause for this conflict seems avoidable, leading one to surmise that tensions between the two growing powers were already strained by this time, and the surface issues probably did nothing more than escalate a “cold” war to a “hot” one, if those modern adjectives can be appropriately applied. This surface issue originated 20 years earlier, when King Agathocles of Syracuse hired some Campanian mercenaries to aid his war effort against Carthage in Sicily. After they were discharged, these mercenaries, who called themselves Mamertines (*Sons of Mars*), treacherously seized the city of Messana on the Sicilian straits. “[T]hey

settled there and proceeded to plunder the surrounding districts, Carthaginian and Greek alike” (Scullard, 1980, p. 165). The new king of Syracuse, Hieron II, undertook in 264 to force them out. Under siege and politically divided, different factions of the Mamertines appealed to both Carthage *and* Rome for help. Carthage got there first, but the Romans sent a consular army under A. Claudius Caudex and easily overcame the Carthaginian garrison. Thus the two powers went to war.

The Romans quickly advanced into the interior of Sicily, and left little doubt after the first year that their intentions extended beyond Messina to include all of Sicily. The Romans had no navy to speak of, though, and the Carthaginians virtually controlled the western Mediterranean. Due to the geography involved in this conflict, naval superiority was inevitably going to be a decisive factor. In 260 the Romans built their first fleet of 20 triremes and 100 quinqueremes, and “in her first venture on the sea defeated a nation whose seafaring traditions were centuries old” (Scullard, 1980, p. 170); although the victory was not so much a triumph of seamanship as of Roman ingenuity. Rather than allow the battle to remain on the ocean, where the Romans were weakest, they outfitted their ships with a hinged wooden plank they termed a *corvis*. The Romans would pull up alongside a Carthaginian ship and lower the plank, running across to the other ship and initiating hand-to-hand combat, at which they excelled. Thus the Romans turned a sea-battle into a land-battle, and changed the fortunes of the conflict. After 21 years of war with undulating fortune for each side, Rome crushed the Punic navy in a battle of the Aegadian islands on 10 March 241. With total dominance of the seas, the downfall of Carthage’s remaining strongholds in Sicily was inevitable. Thus, Carthage sued for peace, and a new treaty was enacted:

‘The Carthaginians shall evacuate Sicily and all the islands lying between Italy and Sicily. The allies of both parties shall be secure from attacks by the other... The Carthaginians shall pay 2,200 talents to the Romans within the period of ten years, and a sum of 1,000 talents forthwith. The Carthaginians shall surrender to the Romans all prisoners of war free of ransom’ (Polybius, 1979, III.28).

The net result of the First Punic War was not unlike the last century’s first World War: by harshly punishing the conquered foe, the victor short-sightedly set up the framework for a second conflict only a generation later. Even Polybius – an outspoken admirer of Rome – concluded that “[in regards to] the clauses concerning Sardinia, it is impossible to discover any reasonable ground or pretext for the Romans’ action” (Polybius, III.30). This situation was exacerbated by the Roman’s tendency to use their position of power to change the terms of the peace treaty, always to their advantage, territorially or militarily. One instance, mentioned by Polybius above, involved Rome forcing Carthage off the island of Sardinia, and extracting additional tribute for the trouble:

Later, at the end of the civil war in Africa, and after the Romans had gone to the lengths of passing a decree declaring on war on Carthage, the following clause was added to the treaty ... ‘The Carthaginians shall evacuate Sardinia and pay a further sum of 1,200 talents’ (Polybius, 1979, III.28).

Livy describes the situation and the relations between the states in this way:

...high passions were at work throughout, and mutual hatred was hardly less sharp a weapon than the sword; on the Roman side there was Rage at the unprovoked attack by a previously beaten enemy; on the Carthaginian, bitter resentment at what was felt to be the grasping and tyrannical attitude of their conquerors. The intensity of the feeling is illustrated by an anecdote of Hannibal’s boyhood: ... Hamlicar [his father]... led the boy to the altar and made him solemnly swear ... that as soon as he was old enough he would be the enemy of the Roman people (Livy, 1965, XXI.1).

In these intervening years Carthage soon rebuilt her commercial empire, mainly through the efforts of Hamlicar Barca and his son-in-law Hasdrubal in Spain. Rome watched this resurgence with no small concern, and at some point (an exact year is unknown) a Roman delegation met with Hasdrubal and made an agreement that the Carthaginians would not pass the Ebro river in arms. While Carthage undoubtedly assumed that this agreement applied to both parties, Rome evidently did not, as they invaded an area

south of the Ebro in 217. In retaliation for this further incursion on Carthaginian interests, Hannibal crossed the Ebro in 218 and sacked the city of Saguntum. Polybius states “when the news of the fall of Saguntum was received in Rome, there was no debate on the question on whether or not to go to war” (Polybius, III.20). Rome did, however, send Ambassadors to Carthage with an ultimatum: surrender Hannibal or go to war. The Carthaginians accepted war (Polybius, 1979, III.33).

At this point Hannibal, in full control of Carthaginian interests in Spain, realized he had a decision to make. He knew that Rome controlled the Mediterranean, and thus transporting an army to the Italic peninsula by sea was out of the question. However, he also realized that it was Rome’s system of allies that supplied her with an almost unlimited supply of men and resources, and that as long as this alliance was in place, long-term victory was unlikely. To defeat Rome, he must attack her system of allies, and convince many of them to join his cause. This, he assumed, would be the easy part of his plan, as many of the allied states were not allies by choice, but by force. His invading army would be seen as an army of liberation.

Thus Hannibal reached the decision to take his army overland, across the Pyrenees and the Alps. The great risk involved in this legendary crossing paid off; Hannibal reached northern Italy in early spring with most of his army intact, losing only 2,000 men out of over 28,000, although most of his elephants were lost in the passage.

If the Second Punic War was the fault of Rome’s institutional paranoia, or inability to show a defeated enemy lenience, it was surely the costliest mistake she ever made. Although Rome would ultimately be victorious in the Second Punic War as well, the damage that Hannibal inflicted in loss of life and property was enormous. In the battle of Cannae alone, Rome suffered 35,000 casualties, Hannibal only 5,700. Rome’s eventual winning strategy was a “scorched-earth” policy pushed by Q. Fabius Maximus, a cautious man who determined to avoid pitched battles at all cost. Although not the type of strategy to win popularity, Rome realized that she couldn’t afford another Cannae, and since Hannibal was never able to break up Rome’s alliance system in the Italic peninsula, his lack of resources eventually exhausted his army. In 202, Hannibal was finally forced to leave Italy and return to Carthage with his army, having failed in his attempt at breaking apart Rome’s allies.

The overall result of the Roman-Punic conflict in the 3<sup>rd</sup> century BC was the establishment of Rome as the dominant power in the western Mediterranean, and a growing sense of its empirical goals and status as a world power. Within the next several decades, Rome had expanded its reach out of Europe and into Asia. The experiences in the Punic Wars of management, political maneuvering, strategic and tactical decisions, and pragmatic realism proved to be lessons Rome learned well, and applied. Of course, Rome had been expanding since it was formed as a Republic in the 6<sup>th</sup> century, but the Rome of the Punic Wars was the beginning of the Empire as it stood for over half a millennium.

## Prospect Theory

Prospect theory can be described as an attempt to resolve certain observed failures of expected utility in the realm of decision under risk (Levy, 1992; Levy, 2003). There are many aspects to prospect theory, but the central feature, the aspect of prospect theory that gives it explanatory ability, is the *framing effect*, in which “the decision-maker’s conception of the acts, outcomes, and contingencies associated with a particular choice” can affect the choice that is made, even between asset-equivalent options (Tversky & Kahneman, 1981, p. 453). As Tversky & Kahneman observed,

Rational choice requires that the preference between options should not reverse with changes of frame. Because of imperfections of human perception and decision, however, changes of perspective often reverse the relative apparent size of objects and the relative desirability of options (1981, p. 453).

Since rational behavior (i.e. expected utility) cannot explain this behavior, an alternative explanation was sought which would incorporate these deviations. The variances from expected utility that make the framing effect possible occur in any number of ways; for one, people tend to appraise a change in assets from the perspective of a *reference point*, rather than seeing the net asset level as an independent status. That is, they are more sensitive to *gains* or *losses* in assets than to deviations from a particular asset level (Levy, 2003).

Following the concept of dependence on a reference point is the idea people tend to overvalue losses in respect to comparable gains (Levy, 1992); Levy calls this *loss aversion* (Levy, 2003). Closely related is the *endowment effect* – the fact that people value what they have more than comparable things they do not have, even absent any emotional attachment to the items (aptly expressed by the proverb “A bird in the hand is worth two in the bush”). A direct result of loss aversion and the endowment effect is that actual losses are felt more keenly than foregone gains; gaining something and then losing it is often seen as more painful than having never attained it in the first place (Levy, 2003).

Another behavioral characteristic that interacts with the loss aversion (and another example of how people treat losses differently from gains) could be termed the *ratchet effect*; that is, people tend to be able to quickly re-orient their reference point in the direction of gains, but are slow to do so for losses. This can even exacerbate the behavior referenced above, where instead of treating a gain+loss as a foregone gain, it is seen as an actual loss because the player has already re-oriented his reference point to incorporate the new gain (Levy, 1992).

Studies have shown that outcomes that are certain are frequently overvalued with respect to outcomes that are ‘merely’ probable; this tendency has been termed the *certainty effect* (Tversky & Kahneman, 1981). A final behavioral trait of decision-makers that should be noted is that individuals tend to be *risk-averse* with respect to losses and *risk-acceptant* with respect to gains (or perceived gains), largely due to the phenomena of reference points and loss aversion (Levy, 1992; Levy, 2003). Individuals are less likely to engage in risky behavior if the results of that behavior would lead to losses in their assets from the perspective of their reference point, and conversely, they are more likely to engage in risky behavior if the results would be the re-acquisition of a previous status quo.

The combination of these behavioral characteristics – the importance of a reference point, and the partial treatment of gains and losses – allows the framing of the reference point to become critical to the decision-making process (Levy, 2003; Mintz & Redd, 2003). This fact is described sharply in the following example:

Choices about medical treatment programs, for example, are influenced by whether the effectiveness of the program is presented as a 90% success rate or a 10% failure rate. Choices about economic policies differ if the unemployment rate is stated as 10% than if the percentage of the workforce employed is stated as 90% (Levy, 2003).

Early literature on the framing effect recognized that any given decision could be framed in more than one way, comparing the various alternative frames to the multiple perspectives possible on a visual scene (Tversky & Kahneman, 1981). Mintz and Redd note that although framing is a central concept to prospect theory, no theory of framing has been presented, and regarding the formal literature on prospect theory, framing as a concept is “remarkably underdeveloped” (2003, p. 194).

Mintz and Redd proceed to provide a classification and discussion of the various classes of framing techniques, some of which they identify as *thematic* (the introduction of “organizing themes” into a decision, focusing attention on a specific aspect of the choice) vs. *evaluative* (the frame alters the reference point of the decision, affecting the meaning of the debate) framing, *productive* (framing attempts that bring about the desired course of action) vs. *counterproductive* (where the framing produces

an effect that was unintended or not anticipated), *successful* (the framing is accepted by the intended audience) vs. *failed* (the framing attempt has no effect on the outcome / is rejected by the audience), *framing* vs. *counterframing* (attempts by rivals or third parties to frame the debate in another or opposite direction in order to counteract the effect of the frame), *structural framing* (framing a decision by manipulating the order in which information is presented to the decision-maker), and *revolving framing* (presenting a series of frames sequentially over a period of time) (Mintz & Redd, 2003). The purpose of this paper is not to repeat Mintz and Redd's thorough treatment of this subject, but to point out that the perceived frame is a crucial part of the decision-maker's process, according to prospect theory, and that the development of the frame is a key (and non-trivial) part of that process.

## Experiment

The experiment to test the ability of prospect theory to predict Hannibal's choice was performed using the Decision Board platform developed by Dr. Alex Mintz at Texas A&M University (the simulator can be located on the web at <http://www.decisionboard.org/academic/>). The decision board is a web-based application that presents the user with a matrix of alternatives and decision dimensions. The decision maker's task is to choose an alternative from a set of alternatives based on the information s/he can access from the application. The application is accessed using a standard web browser at a computer terminal, and the application records pertinent features of the decision-making process.

A decision task typically consists of choosing one of  $A_i$  alternatives, which are evaluated along  $D_j$  dimensions. The values ( $V_{ij}$ ) inside the matrix represent the evaluation of a particular alternative ( $A_i$ ) along a specific dimension ( $D_j$ ). These evaluations are accessed by the user opening the selection with a click of the mouse. Choices are made by clicking on the desired alternative across the bottom of the matrix. The application records (1) the sequence in which the decision maker accesses the various evaluations, (2) the number of items the decision maker views for every alternative along every dimension, and (3) the amount of time that elapses during the decision-making process. Characteristics of the resultant decision are then identified using process-tracing measures, as well as recording the decision itself.

For this experiment, two scenarios were utilized with two separate sets of subjects; in the first, the historical situation was left unchanged, and Hannibal was presented in a domain of loss at the time of the decision. In the second, the situation is changed so that the first Punic War was not lost by Carthage 20 years prior, and thus Hannibal is in a domain of gain at the time of the decision. For both scenarios, the situation was described in such a way as to be "time-ambiguous"; that is, care was taken to use language that sounded modern, so that the test subjects would not recognize the historical situation and alter their decision to match what knew actually happened (whether consciously or sub-consciously). Casual exit polling of the participants indicated that they did not, in fact, correlate the scenario to any particular historical situation, so at least this goal appears to have been achieved.

The values ( $V_{ij}$ ) inside the matrix (the evaluations of the alternatives) were described in the scenarios as coming from various advisors: political, military, economic, or diplomatic as appropriate to the dimension in which the evaluation appeared. The alternatives that the "advisors" were evaluating consisted of a set of three choices: attack, negotiate, or do nothing. The evaluation of each alternative was altered for the different scenarios, as the situation itself was different. Also, the evaluations play a large role in the framing of the situation surrounding the decision, so to adequately frame the two scenarios in opposite directions necessitated rewriting the evaluations to some degree.

While the framing of the domain was the single independent variable in this experiment, care was taken not to bias the decisions by "overstating" the desired domain; that is, the framing of the scenario is not explicit, but implicit within the situation. In particular, against the argument that by framing the historical situation in a domain of gain, I have altered the facts, I would present the records of the ancient historians quoted earlier in the historical overview: accounts such as the one from Livy (1965, XXI.1) where the

child Hannibal is taken before an altar and instructed to swear animosity against the Roman state make it hard to argue that the ancient authors, at least, viewed the Carthaginians in a domain of loss, if Carthage herself did not.

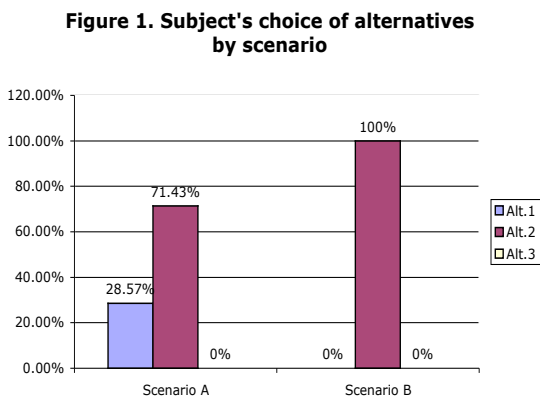
The scenario and alternative matrix for the historical (domain of loss) situation can be found in Appendix A, and the scenario and alternative matrix for the altered (domain of gain) situation in Appendix B.

## Conclusions

Fourteen undergraduate students at Texas A&M University (currently enrolled in a senior-level political science course) participated in the experiment. The study was administered in the political science computer laboratory on the campus of Texas A&M. These fourteen students were randomly assigned one of the two scenarios, so that there were seven respondents for each one.

The subjects knew nothing about the scenarios going in to the experiment, and as was previously mentioned, unofficial polling after the experiment was run indicated that no one linked the scenarios with their historical origins; so presumably, the results were arrived at without bias from knowledge of the historical outcome.

Prospect theory would predict that, given a perception of a domain of loss, decision-makers would be more willing to consider a riskier alternative. The experimental results indicate that this behavior is at work in this situation; while fully 100% of the subjects chose the “safe” alternative in the domain of gain scenario, nearly one third (28.57%) chose the risky alternative in the domain of loss scenario (see Figure 1). While the percentage choosing Hannibal’s actual course of action in the domain of loss scenario was relatively low versus those who still favored the safer alternative of negotiation (71.43%), the difference between the two scenarios is dramatic; in the domain of gain scenario, no respondents chose the risky alternative at all.



These results are in line with prospect theory predictions that a perceived domain of loss tends to push the decision-maker toward risk-acceptant behavior. Although concluding that prospect theory accurately describes the decision-making process employed by Hannibal in his decision to cross the Alps is tempting and possibly accurate, there are other alternatives to this interpretation that should at least be mentioned.

It is possible that although prospect theory *appears* to describe Hannibal’s decision, the decision could also be adequately described by another theory, such as expected-utility. Additionally, failure of the author to frame the historical scenario in such a way that accurately describes the facts and intent of the historical situation (probably due to his incomplete understanding of the history involved) could have inappropriately skewed the results. For completeness sake, additional study should be undertaken (possibly with a wider subject base) to cross-validate the findings of this experiment.

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## Appendix A: The Historical Scenario

You are the military and political leader of an important colony (foreign settlement). Because of communication difficulties between the political leadership of your country and the settlement, you have complete decision-making authority over all available resources, both economic and military. These military resources are significant, as most of the country's army is based at the settlement, under your command.

In close proximity to the settlement is a militarily aggressive regional power with which your country has been in conflict before, and with whom currently tensions are high. About 20 years ago, your country lost a major conflict involving several significant battles, and the cost of this defeat was high, not only in terms of military losses (soldier's lives and territorial losses), but also economically and diplomatically -- with the enforced peace treaty came an enormous loss of prestige and severe economic sanctions.

In addition, since the defeat and the resultant treaty, your opponent has twice violated the treaty to his own advantage, taking territories that have been in your country's possession for years and increasing the burden on your country's economy, with no consequences to themselves since your country has been too weakened by the earlier defeat to resist. In other words, the relations between your two countries show no signs of improvement, but rather your opponent has proven decisively that you cannot trust anything he says.

Now this power is interfering in the affairs of your settlement. They have made a military alliance with a neighboring state with whom you are already in conflict. In the course of this conflict, this neighboring state has appealed to your opponent for military aid.

Your decision on how to respond to this situation has political, economic, military, and diplomatic implications. You have assembled advisors representing each of the pertinent areas, and they have arrived at the following alternatives:

**Attack:** a pre-emptive strike would counter their military advantage, and put the enemy on the defensive. However, the risks involved in the attack are significant.

**Negotiation:** your opponent has shown a willingness to negotiate in the past, and would likely make another agreement, albeit one involving further loss of territory and prestige for your country.

**Do Nothing:** it's possible that your opponent, often slow to respond to situations because of its political structure, could delay a decision on this situation long enough for you to avoid a confrontation.

The decision board will indicate how each advisor evaluated these options. Their evaluations are summarized as a rating on a 21-point scale, where -10 implies that an advisor perceives an alternative unfavorably, 0 implies a neutral position, and 10 implies a very favorable evaluation.

The decision board is presented in the form of a matrix with alternatives heading the columns and dimensions as the rows. A decision has to be made. Please begin the simulation to explore the evaluations given by the advisors and then determine your choice.

As with all "real-life" decisions, there is a trade-off between the amount of information you consider and the time it takes you to make a decision based on the information.

## Alternatives

Dimensions	Attack	Negotiate	Do nothing
<i>Political</i>	<p>Risky. Although the senate leadership doesn't like our opponent any more then you do, they will not look favorably upon a failed military campaign against them, especially one that seems doomed to failure. <i>If</i> you survived the war, your political career would probably be over.</p> <p>I would rate this alternative as <b>-6</b>.</p>	<p>The safest alternative. Although we have been at a disadvantage to the opponent in the recent past, they have always shown a willingness to deal, and negotiating that deal would probably help your standing with the members of the senate who are worried about a second war.</p> <p>I would rate this alternative as <b>8</b>.</p>	<p>A viable decision. No military action at this time would demonstrate to the opponent that our intentions are not as hostile as they may believe. Our concern at this point should be demonstrating a conciliatory stance to the stronger power. Additionally, the chances are good that the opponent will delay action, leaving the problem for your successor.</p> <p>I would rate this alternative as <b>4</b>.</p>
<i>Military</i>	<p>Very risky. The opponent will try to keep you contained in the settlement, and as they have complete control over the waterways, any sea-borne assault options are out of the question. Attacking overland (across <b>two</b> mountain ranges) is nearly impossible – it has never been done by an army of any size, much less one with our heavy equipment. In addition, there are local tribes that will launch attacks on anyone who attempts to cross their territories. While the potential rewards are tempting, the likelihood of success is small.</p> <p>I would rate this alternative as <b>-4</b>.</p>	<p>Best choice. Our military choices don't look very strong at this point; the best option would be to negotiate a cease-fire and continue to build our forces to the point that the encounter would be on equal terms, especially in the field of sea power, where our opponent has us sorely out-gunned.</p> <p>I would rate this alternative as <b>4</b>.</p>	<p>Not really an option. Recent events have forced us into this situation, and pretending it doesn't exist won't make it go away. If you don't deal with the situation in a timely manner, the opponent will eventually show up in our settlement with a sizable army, which would be a military disaster, as we would be defending settler's homes at the same time we were fighting the enemy.</p> <p>I would rate this alternative as <b>-8</b>.</p>
<i>Economic</i>	<p>If a war is inevitable, it would be much better to take the war to the opponent's territory rather than have it occur in our settlement, which is a vital and necessary part of our economy. A war effort overseas would not be nearly as costly as its results on the home front. Additionally, there is the possibility for a war to provide a boost to the economy, which would be very beneficial at this time.</p> <p>I would rate the alternative as <b>3</b>.</p>	<p>This option is not desirable. Any negotiation with the opponent would surely include some form of economic sanctions that would be a severe blow to our economy, especially since we have only recently rebuilt our economy to it's pre-war levels.</p> <p>I would rate this alternative as <b>-3</b>.</p>	<p>This option is the safest. By not incurring any additional cost or wartime at the present, we can continue to build our economy through our trade networks. This trade would likely be interrupted in the event of a war, and maintaining this trade is vital to our economy.</p> <p>I would rate this alternative as <b>5</b>.</p>
<i>Diplomatic</i>	<p>Although this option would send the strongest message, showing our allies that we can defend our interests when threatened and demonstrating to our enemies that we will not be pushed around; the inherent risk and potential consequences of failure prevent me from recommending this course of action.</p> <p>I would rate this alternative as <b>0</b>.</p>	<p>This option is the most prudent. Negotiation will allow us to bide our time and pursue other alternatives, if there are any, to this situation. Unfortunately, this will also lead to a further lack of standing in the international community.</p> <p>I would rate this alternative as <b>2</b>.</p>	<p>This would not be a wise decision. Many nations are watching to see how you will respond to this situation. The loyalties of many allies and the behavior of some enemies might rest on our response. We must show strength, not indecision to our surrounding states.</p> <p>I would rate this alternative as <b>-3</b>.</p>

## Appendix B: The Altered Scenario

You are the military and political leader of an important colony (foreign settlement). Because of communication difficulties between the political leadership of your country and the settlement, you have complete decision-making authority over all available resources, both economic and military. These military resources are significant, as most of the country's army is based at the settlement, under your command.

In close proximity to the settlement is a militarily aggressive regional power with which your country has been in conflict before, and with whom currently tensions are high. About 20 years ago, your country won a major conflict against this power, involving several significant battles. The conflict was protracted and difficult, costly to both sides, but your victory secured your standing as the dominant power in the region. With this standing came great economic and territorial gains, and your opponent has been watching this expansion with no small degree of envy – they are still resentful of the loss of prestige and economic sanctions that you imposed on them after the conflict.

Your position of dominance (the economic prosperity that has resulted) is established, but by no means a foregone conclusion. Your opponent has spent the last 20 years rebuilding their military infrastructure, and has been making aggressive overtures toward the settlement under your control – one of your country's primary economic resources.

They have recently made a military alliance with a neighboring state with whom you are already in conflict. In the course of this conflict, this neighboring state has appealed to your opponent for military aid, and they appear to be ready to assist them, which would once again bring your two countries into conflict.

Your decision on how to respond to this situation has political, economic, military, and diplomatic implications. You have assembled advisors representing each of the pertinent areas, and they have arrived at the following alternatives:

**Attack:** a pre-emptive strike would counter their military advantage, and put the enemy on the defensive. However, the risks involved in the attack are significant.

**Negotiation:** your opponent has shown a willingness to negotiate in the past, and would likely make another agreement, perhaps eliminating the enormous loss of life and resources sure to result from another war.

**Do Nothing:** it's possible that your opponent, often slow to respond to situations because of its political structure, could delay a decision on this situation long enough for you to avoid a confrontation.

The decision board will indicate how each advisor evaluated these options. Their evaluations are summarized as a rating on a 21-point scale, where -10 implies that an advisor perceives an alternative unfavorably, 0 implies a neutral position, and 10 implies a very favorable evaluation.

The decision board is presented in the form of a matrix with alternatives heading the columns and dimensions as the rows. A decision has to be made. Please begin the simulation to explore the evaluations given by the advisors and then determine your choice.

As with all "real-life" decisions, there is a trade-off between the amount of information you consider and the time it takes you to make a decision based on the information.

## Alternatives

Dimensions	Attack	Negotiate	Do nothing
<i>Political</i>	<p>Risky. Although the senate leadership doesn't like our opponent any more then you do, they will not look favorably upon a failed military campaign against them, especially one that seems doomed to failure. <i>If</i> you survived the war, your political career would probably be over.</p> <p>I would rate this alternative as <b>-6</b>.</p>	<p>The safest alternative. Our opponent has always shown a willingness to deal, and negotiating that deal would probably help your standing with the members of the senate who are worried about a second war.</p> <p>I would rate this alternative as <b>8</b>.</p>	<p>A viable decision. No military action at this time would demonstrate to the opponent that our intentions are not as hostile as they may believe. Our concern at this point should be demonstrating a conciliatory stance to offset their aggressive tendencies. Additionally, the chances are good that the opponent will delay action, leaving the problem for your successor.</p> <p>I would rate this alternative as <b>4</b>.</p>
<i>Military</i>	<p>Very risky. The opponent will try to keep you contained in the settlement, and as they have complete control over the waterways, any sea-borne assault options are out of the question. Attacking overland (across <b>two</b> mountain ranges) is nearly impossible – it has never been done by an army of any size, much less one with our heavy equipment. In addition, there are local tribes that will launch attacks on anyone who attempts to cross their territories. While the potential rewards are tempting, the likelihood of success is small.</p> <p>I would rate this alternative as <b>-7</b>.</p>	<p>Best choice. Although we are the dominant power in the region, our opponent has been devoting serious resources to rebuilding his military infrastructure, and we really don't have information on how successful he has been. Delaying conflict, at least until that intelligence can be gathered, would be the most prudent course of action.</p> <p>I would rate this alternative as <b>7</b>.</p>	<p>Not really an option. Recent events have forced us into this situation, and pretending it doesn't exist won't make it go away. If you don't deal with the situation in a timely manner, the opponent will eventually show up in our settlement with a sizable army, which would be a military disaster, as we would be defending settler's homes at the same time we were fighting the enemy.</p> <p>I would rate this alternative as <b>-8</b>.</p>
<i>Economic</i>	<p>If a war is inevitable, it would be much better to take the war to the opponent's territory rather than have it occur in our settlement, which is a vital and necessary part of our economy. A war effort overseas would not be nearly as costly as its results on the home front. Additionally, there is the possibility for a war to provide a boost to the economy, which would be very beneficial at this time.</p> <p>I would rate the alternative as <b>1</b>.</p>	<p>This option is promising, providing that negotiations don't involve any economic hardships on our part – which there is no reason to assume they would, since we are in the stronger bargaining position.</p> <p>I would rate this alternative as <b>5</b>.</p>	<p>This option is the safest. By not incurring any additional cost or wartime at the present, we can continue to build our economy through our trade networks. This trade would likely be interrupted in the event of a war, and maintaining this trade is vital to our economy.</p> <p>I would rate this alternative as <b>5</b>.</p>
<i>Diplomatic</i>	<p>Although this option would send the strongest message, showing our allies that we can defend our interests when threatened and demonstrating to our enemies that we will not be pushed around; the inherent risk and potential consequences of failure prevent me from recommending this course of action.</p> <p>I would rate this alternative as <b>0</b>.</p>	<p>This option is the most prudent. Negotiation will allow us to bide our time and pursue other alternatives, if there are any, to this situation. Additionally, this will also lead to a greater standing in the international community, as we will be seen as the stronger party willing to negotiate with the weaker.</p> <p>I would rate this alternative as <b>8</b>.</p>	<p>This would not be a wise decision. Many nations are watching to see how you will respond to this situation. The loyalties of many allies and the behavior of some enemies might rest on our response. We must show strength, not indecision to our surrounding states.</p> <p>I would rate this alternative as <b>-4</b>.</p>

