

# Man, State, and War: An Experimental Approach\*

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## Abstract

Extensive literatures on the impact of system structure and democratic politics on the outbreak of war have struggled to reach consensus on the theoretical explanations underlying observed patterns of international conflict. Studies using both quantitative and qualitative methods have resisted definitive theoretical interpretation because of fundamental problems in making causal inferences on the basis of observational data. We argue that progress in these stalemated literatures—as well as other explanations of war—may best be advanced by shifting our focus to experimental analyses that allow analysts to identify and test causal mechanisms. The field of behavioral economics has relied on these techniques to test causal mechanisms for some time. But this literature has not had an impact on the study of international relations because the games typically analyzed—such as the prisoners' dilemma and divide the dollar—to not match many of the important characteristics of leaders' decisions to go to war. We develop a crisis bargaining simulation that we believe reflects most—though not all—of the central theoretical assumptions that serve as the foundation for the most prevalent explanations of war. We then develop experimental modules that can be applied to this game in order to test the mechanisms underlying the literatures on system structure and the democratic peace. We conclude by outlining the hypotheses we expect to test from these modules as well as a brief discussion of future applications of our approach.

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## Introduction

Over the past three or four decades, two waves of scholarship have heavily influenced international relations scholarship on the causes of war: systemic theories and the democratic peace. Both waves upended the scholarly consensus by proposing novel explanations for when and why we will see interstate conflict. Yet each literature also remains unresolved, pocked with empirical and theoretical lacunae that inhibit its preeminence.

First, during the 1970s and 1980s, scholars focused on the importance of system structure as a cause of war. The central work driving this wave, of course, was Kenneth Waltz's *Theory of International Politics*. Waltz's theory was provocative because he attributed the propensity for war in the international system to its structure, rather than to the characteristics of individual leaders or states (Waltz 1979, Ch. 6). For Waltz, the international system is a "constraining and disposing force" that is akin to the power of economic markets (Waltz 1979, 72). Waltz's theory was groundbreaking because it both obviated the problem of studying international politics from multiple levels of analysis (Singer 1961)—the systemic level was prioritized—and upended the conventional wisdom about system polarity and conflict. Indeed, Waltz draws further on the analogy between the international system and economic markets to posit a mechanism to explain why bipolar international systems are more stable and less conflict-prone than multipolar ones, rather than the opposite. Waltz's theory ushered in a new conventional wisdom, as countless scholars sought to provide evidence supporting or opposing the new intellectual status quo (see, for example, Singer, Bremer and Stuckey 1972; Bueno De Mesquita and Lalman 1988; Rasler and Thompson 1991; Huth, Bennett and Gelpi 1992; Mansfield 1992).

Following the end of the Cold War, however, systemic explanations of conflict fell out of favor as state structure—and especially democratic political structures—became the most prevalent explanation of war. Maoz and Russett (1992) set off an avalanche of theoretical and empirical work on the "democratic peace." While the Waltzian perspective explicitly dismissed domestic explanations of conflict as "reductionist" (Waltz 1979), the Democratic Peace literature provided clear evidence that democratic states were less likely to get involved in military conflict with

one another than pairs of other types of states or mixed pairs of states (Maoz 1997). Yet this literature has struggled to determine whether democracies are more peaceful in general (Benoit 1996; Rousseau et al. 1996). Plausible causal mechanisms linking democracy to military conflict have proliferated, but no consensus emerged regarding the necessity, sufficiency, or validity of any of these mechanisms.

In fact, despite mountains of empirical work, both the debate over the democratic peace and the debate over systemic polarity ended without any scholarly consensus emerging about the validity of these theories of war. Based on the available historical evidence, scholars can safely conclude that bipolar systems might be more stable (Saperstein 1991), but they also might encourage leaders to be more conflict-acceptant (Brecher and Wilkenfeld 1991). Similarly, based on existing empirical work, one might conclude that the democratic peace is either a spurious consequence of state security interests (Gowa and Farber 1994), a function of the shared normative underpinnings of democratic politics (Dixon 1994), or a result of the constraining effects of democratic political structures (Bueno De Mesquita et al. 1999). In short, neither line of scholarship has yet to establish its scientific preeminence, despite the welter of compelling observational evidence.

We argue that one can attribute the elusiveness of consensus in each case to the absence of direct empirical tests of their implied *mechanisms*, or frequently occurring and easily recognizable causal patterns (Jon 2007). The problem here is not one of theory. The logics of both the systemic system structure and democratic peace theories of war have been clearly articulated and even formalized. And the problem is not one of association. Bipolar systems and democratic states do seem less conflict-prone. Consensus remains elusive in each case because we cannot credibly assess the empirical claims that the international system or certain states would have been either more peaceful or war-prone had the structure of the system or the structure of their governments been different. Moreover, the problem does not originate from allegiance to qualitative or quantitative forms of evidence; it emerges regardless of whether observational evidence is assessed qualitatively or quantitatively. Put simply, the culprit is the familiar funda-

mental problem of causal inference. Establishing causal claims requires one to specify credible counterfactuals, and counterfactuals are challenging to identify in the absence of experimental control (Holland 1986). As a result, the empirically observed patterns of conflict remain open to conflicting interpretations.

Below, we show how one can use the laboratory to create a facsimile of the international system, and thereby to gain insight on the impact of system structure and democratic governance on conflict. Experiments conducted in this environment authentically represent the mechanisms at work in different conceptions of international conflict while also permitting exploration of counterfactual conditions that differ only along the theoretically relevant dimensions. The result are estimates of quantities of interest that are credibly caused by the theoretical mechanisms. Crucially, this architecture is modular—one can extend it in order to answer many other questions that IR scholars have, yet for which observational and case study evidence are not discriminating. In this way, we see the lab as a *supplement* rather than a magic bullet. Our aim here is to provide additional, internally valid evidence that complements and crystallizes existing, externally valid analyses. For example, while we investigate the effects of system structure and democracy on conflict, we are not limited to system- and state-level variation. In addition, this inferential apparatus can identify how individual-level variables can interact with system and state to produce cooperation and conflict. Our approach will reinvigorate classic debates about international conflict with novel evidence about specific mechanisms, all while leaving open the possibility of testing novel theories.

## **Why Go to the Lab?**

The decision to go to war is a complex process. While social scientists in other fields have the luxury of studying phenomena solely at the level of the individual, international relations scholars must consider behavior that depends on action at three different levels: (1) the individual, (2) the nation-state, (3) the international system (Singer 1961). Indeed, IR scholars have spent decades debating which of these levels ought to dominate one's analysis of international

phenomena, with war as the most prominent explanandum. One can trace this debate back to Waltz's *Man, the State, and War* (1959), in which Waltz considers the importance of each level, prior to determining the international system to be most important for inferring whether war will occur. Despite these foundational debates, it is clear that for a given international political event—particularly war—all levels play some role.

Debating which level of analysis is most apt for studying war has gone hand in hand with a larger debate over methods of inference. At least since IR scholars began considering the complexity of war, as well as the levels of analysis problem, questions over the appropriate methods of inference have also been present. It is not enough to reason that regime type affects the propensity for a state to go to war; one must also determine the best means of assessing whether this is the case. Perhaps unsurprisingly, IR scholars have addressed inferential questions with a diverse set of approaches, including case studies, formal models, and quantitative observational methods, all with the goal of identifying where, when, and why war happens. Yet, while scholars have spent decades addressing these questions, consensus remains elusive.

Nearly all of the issues associated with the empirical study of the causes of war arise from the fundamental problem of causal inference. This problem emerges from a counterfactual notion of causality, in which the effect of a cause is defined as the difference between a world in which the cause was present and another in which it was absent. Estimating causal effects is therefore difficult to do credibly, as one never observes both the actual and counterfactual worlds. For example, to measure the causal effect of democracy on peace, we must observe the propensity for a country to engage in conflict if its government is a democracy, as well as if it were an autocracy, holding all else constant. This task is obviously impossible, which explains the fundamental character of the problem.

There are many different classes of methods that seek to credibly establish causal effects. Each deals with the fundamental problem in a different way. For example, many IR scholars use case studies to test their theories. This approach generates rich narrative accounts of conflict-producing mechanisms, but it suffers from logically entailed problems of scope. It is not feasible

to build authentic, yet comparable case-specific accounts of the universe of potential interstate conflicts, thus necessitating case selection and its concomitant inferential limitations. Case selection occurs after, and often because of, the outcome under study, and it is limited to the actual historical record, rather than the set of hypothetically possible worlds conceptualized in the counterfactual model of causality. Despite many formal procedures for selecting cases and conducting analysis (Bennett and Checkel 2014), one runs the risk of choosing cases that conform to the logic of one's theory, even when using a technique such as Mill's Method.

Alternatively, observational quantitative studies of war—while externally valid—suffer from a different set of inferential problems. The most popular such studies are model-based (e.g., regression-based), and are useful to uncover generalizable associations among variables. But they are also much less suited to uncovering particular causal mechanisms at work. This problem is especially acute in international politics when such mechanisms involve the interaction of multiple levels of analysis. Conventional regression techniques do not provide causal estimates without further assumptions that are difficult to justify in international politics.<sup>1</sup> Furthermore, these problems are not readily resolved by relying on alternative statistical techniques such as matching or weighting, each of which requires the same identifying assumptions as regression (Morgan and Winship 2014). Moreover, design-based quantitative studies based on natural experiments or instrumental variables offer another potential path to credible causal inference. But such studies often only serve to multiply and, often, obscure the set of underlying identifying assumptions that would justify causal inferences (Sovey and Green 2011). These assumptions end up being most believable precisely when they produce inferences with the least generalizability.

The problem in each method is the difficulty of credibly identifying how the world might have looked in some hypothetical, alternative condition. To be clear, none of these methods dominates the others on this criterion. Qualitative studies offer superior accounts of specific cases, but these studies—by design—hold a host of confounding properties constant. Model-based quantitative studies offer generalizability at the expense of heroic identifying assumptions

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1. See Morgan and Winship (2014, Ch. 6) for an extended discussion of why most regressions are not causal.

that make causal inferences generally suspect. And design-based quantitative studies essentially split the difference, often generating credible inferences only when those inferences have the least relevance.<sup>2</sup> As long as there is no mutually agreed upon method to build counterfactuals, it is likely that IR scholarship will remain at loggerheads.

We propose to augment the existing complement of methods with laboratory experiments, which are an excellent way to supplement observational methods. As a comparison, the field of behavioral economics has blossomed over the past several decades precisely because of its ability to identify the causal structure of consumer choice. The combination of lab experiments and real-world evidence on consumer choice has had a transformative impact on economic science. Contrary to conventional wisdom, the advantage of experiments is not the possibility of randomization; rather, it is what this randomization buys us when combined with control. Indeed, control is often taken for granted, and certainly the more vital component for identification of counterfactuals (Holland 1986). Of course, a laboratory study can never fully simulate the decision making environment of war within the limits of any reasonable allowances by an IRB. However, games played in a lab setting can validly reflect many—if not most—of the theoretical mechanisms articulated by many prominent theories of war. Given an appropriate facsimile of the international system, it would be straightforward to compare, say, two ideal worlds that differ only in terms of system or state structure.

The obvious challenge is to create a widely accepted simulacrum of the international system in the lab. In contrast, the behavioral economics literature made some inroads into political science through the analysis of familiar simple games such as the prisoners' dilemma (Goette, Huffman and Meier 2006). However, the influence of this approach on IR has been limited by at least two factors. First, analysts have worried that theories of war seek to explain the behavior of political elites, while the subjects in lab studies tend to draw from the mass public (Hyde 2015).

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2. For instance, economists use the local average treatment effect (LATE) to identify unbiased treatment effects in the presence of heterogeneity (Imbens and Angrist 1994). However, many criticize this, and similar, approaches because they can only identify causal effects for specific subsets of the population (Deaton 2009). For example, Angrist, Pathak and Walters (2013) are able to identify the causal effect of charter school attendance on educational outcomes solely for those students who would enroll in a charter school *only* if they win an admissions lottery.

Second, the games that serve as the foundation for the behavioral economics literature—such as the prisoners’ dilemma and divide-the-dollar—do not capture many of the central dynamics and dilemmas of the decision to go to war.

Both concerns may be allayed with careful attention to both theory and evidence. For example, the causal mechanisms at the root of both the system structure and democratic peace theories of war are characteristics of basic human decision making and behavior under high levels of risk and uncertainty. One of the primary distinctions between elite and mass level decision making, however, is the incentive structures and roles facing elite and mass decision makers. While political elites may be self-interested, they are generally acting on behalf of some constituency. This role as a delegate protecting the interests of others changes the moral calculus of leaders’ behavior (Applbaum 2000). Behaviors that would generally be considered inappropriate—such as the use of violence—become appropriate for leaders when acting to protect the safety and welfare of their constituents March and Olsen (2008). Experimental research on war has generally not captured this key distinction that may shape the behavior of elites. Consequently, we introduce incentives to create a sense of responsibility among our participants to defend the interests of others.

With regard to the concern simple games do not capture decisionmaking before war, the primary limitation of the experimental literature on the causes of war has been the failure to construct a game that adequately simulates the incentives and decisions that are at the core of the major theories of war. As noted above, the experimental literature on bargaining behavior in international relations has focused on games such as the prisoners’ dilemma Axelrod (1981) or divide the dollar. We seek to redress this weakness by building a war game that captures the decision making environment at the root of most—though admittedly not all—of the prominent theories of war. We turn next to a description of the key aspects of this war game. We then turn to a discussion of the experimental treatments that we propose as a mechanism for testing the mechanisms at the core of systemic theories of war as well as the democratic peace. Finally we discuss some of the key hypotheses that emerge from our experimental game structure as well

as our plans for testing these hypotheses.

## **The Game of War**

We begin constructing our simulation with the simplest scenario: two unitary state actors engaged in a competitive bargaining situation that may be resolved either through diplomacy or by force. We draw on the extensive literature on war and crisis bargaining to develop a simulation that captures many—though admittedly not all—of the key dynamics of conflict initiation while trying to retain a relatively simple game that can be conducted in the context of the lab. Toward this goal we identified five key characteristics of the game that we believe are important in simulating the crisis bargaining environment.

First, war is costly. The assumption that *war is costly* to both parties is central to nearly all rationalist theories of war (Fearon 1995). Moreover, the destructiveness of war to both life and property is a self-evident fact that seems essential to any analysis of the problem. Second, *war is always available* as a policy choice. One of the key features of international politics is the difficulty in enforcing contracts as a result of the anarchic nature of the system (Waltz 1979). Consequently, war is always available to state actors as a potential solution to their policy disputes. Third, *war can occur by chance*. Throughout much of the Cold War, prominent analyses of bargaining focused on the possibility of war occurring even in the absence of any deliberate attempt to precipitate it (Herz 1950; Butterfield 1951; Schelling 1960, 1966). In fact, manipulating the risk of inadvertent violence was one of the major levers of influence in the extensive work on bargaining based on the insights of Thomas Schelling. Fourth, the *war has uncertain outcomes*, in a specific sense of the term (Knight 1921). We are not simply asserting that the outcome of war is risky (i.e., victory and defeat occur with some probability that is known ex ante). Rather, we are insisting that the outcome of war is uncertain, meaning that there is ambiguity about the chances of victory. While the leaders have a general sense of some important factors that determine the probability of victory and defeat, it is not generally possible for leaders to calculate a precise probability of victory prior to a war. This assumption has important

consequences for bargaining because players will be unable to deduce optimal equilibrium strategies. Instead, policy choices regarding war will have to be made based upon assumptions and suppositions about how a potential war would play out. We believe that this uncertain—not merely risky—environment comes much closer to simulating the bargaining environment of international politics than more typical simulations where expected payoffs are known *ex ante* (Axelrod 1981). And finally, *war and bargaining outcomes have cumulative consequences* across a sequential set of interactions. International bargaining games are often modeled either as a single-shot interaction, or as an iterated interaction in which the parameters of the game are reset after each round. One of the key motives for war, however, is the potential that the gains or losses from conflict can increase an actor’s power in future interactions (Grieco 1988; Blainey 1988). The cumulative nature of both is the crux of the commitment problem that is at the root of many rationalist theories of war (Fearon 1995; Walter 1997).

In light of these considerations, we construct the following the experimental model. An experimental session includes two subjects, each of which is endowed with a “war chest” denominated in experimental currency. For simplicity, the simulation begins with equal war chests. Each session consists of a number of rounds that serve to increase or diminish these war chests, and at the end of the session, subjects’ war chests are converted to US dollars. To simulate the role of a leader acting on behalf of others, which may give individuals license to engage in behaviors that would otherwise be viewed as inappropriate, a donation equal to each war chest will also be made to a charity of the subject’s choice. To avoid end-of-game effects, rounds of the game continue indefinitely, with an exogenous probability that the game will end after each round.

Each session proceeds in a sequence of rounds, and in each round, subjects compete to obtain a prize, which is also denominated in experimental currency. A round itself is a sequence of (an endogenous number of) periods. In each period, subjects make simultaneous moves, choosing either 1) to demand a specific percentage of the prize (ranging from 0 to 100%), or 2) to initiate a war. The outcome of the round depends on both subjects’ decisions.

The round ends peaceably if both subjects choose to make demands that sum to no more than 100% of the prize. If the two demands sum to exactly 100%, then the prize is divided between the subjects accordingly. If the two demands sum to less than 100% of the prize, each subject receives her demand and the remainder of the prize is lost. Burning unclaimed prize money creates an incentive for subjects to bargain hard and not leave money on the table. In either case, once the prize is divided, the funds are added to each subject's war chest and the round ends.

A stalemate results if the subjects make demands that sum to more than 100% of the prize. In the case of a stalemate, war occurs with an exogenous, but unknown, probability that monotonically increases with each successive stalemate. This exogenous risk of war incorporates the "brinkmanship" aspect of bargaining that is central to much of this literature (Schelling 1960, 1966). If war does not break out by chance, then the size of the prize is reduced according to a commonly known schedule, which helps capture the future discounting familiar from formal theories of crisis bargaining (Slantchev 2003), after which the next period in the round begins.

War occurs when either subject chooses war as a policy option, or by chance as the result of a stalemate. If war occurs, both parties are penalized a fixed, commonly known, cost that is removed from each war chest. War is an all-or-nothing contest in which one subject receives 100% of the remaining prize. The outcome of the war is determined by chance. Subjects are informed that the probability of victory in war depends on the ratio of their war chests, in a fashion similar to contest success functions (Skaperdas 1996). However, subjects will not be informed about which function will be used. Therefore, while they will be able to make rough guesses of their chances of victory, they will not be able to calculate the exact expected value of war. As noted above, this uncertainty both mimics the "fog of war" that surrounds real-world military conflict and prevents subjects from deducing a definitively optimal strategy. Once the outcome of a war is determined, the winner adds the prize to her war chest, both subjects pay the costs of war, and the round ends.

This simulation captures all five of the core characteristics of war that we described above.

Moreover, our incentive structure of cash prizes combined with donations to a favorite charity gives subjects “skin in the game” that will create both the incentives and the normative permission to drive tough bargains rather than simply offer to divide the prizes evenly. Nonetheless, this simulation does not yet incorporate a number of important aspects of war initiation. Many of these limitations can—and will—be addressed as we add differing structural “modules” to the game, as we discuss below. For example, it would be fairly straightforward to vary characteristics of the game such as the number of subjects (i.e. bipolar versus multipolar system), or the domestic political incentive structures for subjects. Moreover, it would also be straightforward to experimentally vary aspects of the war simulation itself—such as the possibility of war occurring by chance, or the level of uncertainty surrounding the outcome of war—to evaluate the causal impact of those characteristics on the behavior of the subjects.

However, we would acknowledge that taking war “to the lab,” does place some limitations on the kinds of theories of war that we can address. In particular, we have concerns about including the politics of formal alliances and/or communication between subjects other than the communication that is contained in the bargaining offers. The formation of alliances would require permitting relatively unstructured communication between subjects in order to negotiate deals on an ad hoc basis. We worry that the availability of such communications would open up the opportunity for subjects to collaborate against the experimenters and “break” the simulation. This limitation is driven by one of the fundamental differences between a laboratory situation and international bargaining, the “real-world” of international politics (i.e. the situations and events that create opportunities and risks for bargaining) is not an actor against which state leaders can collaborate for their mutual benefit. We recognized that the difficulty in addressing alliance politics and unstructured “cheap talk” communications is a limitation of our approach, but we believe that these limitations are more than outweighed by the many benefits of simulating the decision to initiate war within a laboratory environment. In particular, we believe that this approach can yield valuable insights into causal impact of various factors on the onset of war that are nearly impossible to identify in observational data.

## The Modular Structure of the Setup

In the previous section, we described the basic structure of a game that simulates life in the international system. This task is not trivial because the IR literature is rich with conceptual models of war onset. While we believe that our war game incorporates many of the significant aspects of interstate crisis bargaining and the onset of war, we are also aware that the literature on the causes of war is much broader than simply a study of crisis bargaining. In particular, our war simulation begins by positing two unitary players interacting with one another. In so doing, we design the game to be a plausible, minimally sufficient representation of the international system. The rationale for doing so is not to determine which theoretical perspective “wins,” or explains more variance in the outcome of our game. Rather, our goal is to provide evidence for the precise mechanism by which leaders make decisions to cooperate or go to war. As we have described, an experimental setup provides the ideal test bed for uncovering how such a mechanism works.

This basic war simulation’s limited conceptualization privileges explanations of war that are at the dyadic level of analysis. That is, our basic simulation will allow us to examine the impact of characteristics of the interaction—such as bargaining strategies—and characteristics of the game structure—such as the level of uncertainty—on the probability of war onset. Unfortunately, this basic simulation will not allow us to test the theories of system structure and democratic governance that represent our core motivation for “going to the lab.”

However, as noted above, the biggest advantage of our approach is that we can generate an international system and re-run it, which is impossible in observational studies. Viewed from the perspective of our two key paradigms, our basic war simulation depicts an experimental setup of a bipolar international system with autocratic states. However, we are not only able to re-run “history” using the lab, but we are also able to *modulate* the structure of our international system. This feature is vital because most theories of war and international politics make precise predictions about how behavior changes under certain circumstances. For example, Waltz (1979) describes how and why multipolar systems are less stable and more war-prone

than bipolar ones, and Bueno De Mesquita et al. (1999) provides evidence that regime type may affect a state's propensity to go to war. With our design, we can randomly assign players to differing bargaining contexts and in doing so identify the causal impact of different theoretical mechanisms.

Thus, rather than privileging one unit of analysis, the game will allow us to integrate at least 3 levels of analysis in international politics: (1) the structure of the system, (2) dyadic interactions, and (3) domestic politics. Moreover we can account for the interaction of factors from across these levels of analysis. Finally, as we discuss below, in future studies we plan to expand our scope to include a fourth level of analysis: individual cognitive and psychological characteristics.

Below, we describe two such “modules” to the game. While one can imagine dozens of options for how to modulate the game, we focus on two key changes: regime type and system size. First, we describe changes in the game that may result when the regime type of our states is changed. This modification brings to bear the opportunity to gain some insight into well-worn claims about when and why democracies fight. Second, we alter the number of states in the system to see whether bipolar systems are more stable than multipolar systems.

### **Democracy and the Onset of War**

While the democratic peace literature has posited numerous potential arguments to account for this observed pattern, the most widely cited and broadly accepted arguments focus on the constraining effects of public opinion as expressed through elections as the central mechanism that alters the conflict behavior of democratic states. Unfortunately, as we noted above, the democratic peace literature has struggled to test this causal mechanism, both because elections are not randomly assigned to states and because the existence of elections is correlated with a variety of other factors that may also affect conflict behavior. Thus we propose to test the impact of electoral dynamics on the onset of war by expanding our experiment to conceptualize states as groups of players with differing mechanisms for selecting a leader who plays the inter-state bargaining game on behalf of herself and her constituents.

Specifically, rather than a single player, in this experiment states will be sets of 3 players each randomly assigned to membership in that state. We chose states comprised of 3 players because it is the smallest number of actors where voting can be meaningful. After players are assigned to a state, then the state is randomly assigned a political structure: democratic or autocratic. The nature of the political structure for each state will be common knowledge. In all states, one of the players is randomly selected to be the leader and the other two are assigned the role of constituents. In autocratic states, players are told that the leader may be toppled by a coup with some exogenous probability after each round. In that case, one of the constituents will be randomly assigned to become leader and the game will continue. In democratic states, players are told that the leader will stand for re-election after 4 rounds of play. If a majority of the players vote to retain the leader, then she continues to serve. If, however, a majority of players vote to remove the leader, then one of the constituents is randomly selected to replace her and the game will continue.

This structure of the game will allow us to assess the incidence of war between pairs of democratic states, pairs of autocratic states, and mixed pairs of states. Moreover, the experiment will allow us to test the causal mechanisms at the core of the “democratic constraint” argument. Are democratically accountable leaders more reticent to use force? Is this reticence only with regard to other democratic leaders? Are democratically accountable leaders more sensitive to the prospect of losing a war? And do democratically accountable leaders more closely represent the policy preferences of their constituents in foreign policy?

In future research, one could imagine further expanding the experiment by varying the structure of the election process within democracies from a presidential to a parliamentary style system. For example, rather than having presidential-style regularly scheduled elections, the constituents in a democracy could be allowed to make a vote of “no-confidence” after each round as would be the case in a parliamentary system.

## **Multipolar versus Bipolar Systems**

Another major literature on the sources of international conflict has focused on the relative stability of bipolar and multipolar interstate systems (Waltz 1979). In this version of the experiment, actors will be randomly assigned to bargaining situations with either 2 or 3 players. We chose 2 versus 3 because Waltz (1979) emphasizes the fundamental qualitative distinction between systems of 2 and 3 players, and because this conceptual divide is supported by subsequent theoretical work (Gallop 2016). In the multipolar system, players will have to bargain simultaneously with the other 2 players. In the event that a player becomes involved in 2 wars simultaneously, then her “war chest” will be divided evenly between the two conflicts when determining the probability of victory. Thus players who are caught in a two-front war against other players who are not so divided will be at a significant disadvantage.

This simple experimental manipulation captures the core arguments about systemic uncertainty that are at the root of the polarity debate (Huth, Bennett and Gelpi 1992; Huth, Gelpi and Bennett 1993). Thus it will allow us to assess the extent to which bipolar and multipolar systems are prone to war. Just as importantly, it will allow us to examine the mechanisms by which system structure may lead to war. For example, arguments about systemic uncertainty imply that leaders with different personality traits may respond differently to a multipolar environment. Our experimental control of system structure combined with our ability to measure personality traits in the lab will allow us to test each step in this causal chain.

## **Further Experimental Treatments**

These two experimental manipulations represent only the beginning of the kinds of arguments and mechanisms that we can test with our simulation. We could, of course, introduce both the polarity and the democracy treatments simultaneously to see whether systemic and state characteristics interact. For example, are democratically accountable leaders more risk averse? Moreover, we believe that the modular structure of our simulation could allow us to test various other treatments. One could imagine, for example, randomly varying a lucrative trading

relationship between the bargaining states in order to assess the impact of economic interdependence on war. Moreover, our analysis of these arguments in the lab could allow us to assess whether difference state or systemic structures or different leadership personalities moderate the relationship between interdependence and war. And we are certain that future scholars will think of additional treatments that could be assessed in this context.

## **Testable Hypotheses**

Our simulation of war onset in the laboratory will yield data that will allow us to test a number of hypotheses on the origins of war that have been prominent in the literature. While some of these tests will require significant statistical modeling, the experimental structure of our study will make many of these tests very straightforward, and may require only simple tests such as difference of proportions tests.

### **System-Level Hypotheses**

As noted above, one of the most salient debates over the causes of war in the international system has been the extent to which bipolar and multipolar system are prone to war. Our study would allow a very simple test of this hypothesis by allowing us to compare the proportion of bargaining sessions and round that result in at least one of the players choosing war. Drawing on Waltz (1979), we hypothesize that:

**H1** *The incidence of war will be lower among bargaining sessions and rounds conducted in a bipolar environment.*

In addition, some scholarship has suggested a contingent relationship between system structure and war (Huth, Bennett and Gelpi 1992). Specifically, this argument suggests that since one of the principal effects of polarity in the system is the level of uncertainty that decision makers face, we should expect the impact of polarity to depend upon the risk propensity of state leaders. This expectation is testable at the individual rather than the system level. Thus we expect that:

**H2** *The impact of systemic polarity on the propensity to initiate conflict will depend upon the risk*

*propensity of state leaders. Risk acceptant leaders will be more likely to initiate war in bargaining rounds conducted in a multipolar environment. Risk averse leaders will be less likely to initiate conflict in bargaining rounds conducted in a multipolar environment.*

### **Dyadic-Level Hypotheses**

Variation in the structure of the bargaining game will allow us to test a variety of hypotheses about the relationships between states and their impact on the incidence of war. One of the most prominent hypotheses at the dyadic level has been the impact of the balance of military capabilities on war. Some scholars have argued that war is more likely between equal pairs of states (Organski 1958; Blainey 1988) because the bargaining parties have difficulty anticipating which state would win a war. Others, however, have argued that an equality of power deters conflict (Deutsch and Singer 1964; Morgenthau 1973). These hypotheses can be tested observationally as the relative size of the war chests of the competing states varies throughout the experiment. Moreover, we can test this expectation experimentally by altering the initial resources available to each state.

**H3** *War will be more (less) likely in bargaining sessions and rounds conducted with more evenly distributed resources between states.*

A second major literature on the causes of war focuses on bargaining tactics. The structure of our experiment in sequential rounds within each session will allow us to examine the impact of bargaining strategies on war. Specifically, some theories of bargaining (Schelling 1960, 1966) emphasize the importance of demonstrating commitment and the willingness to fight. Subsequent scholarship (Snyder and Diesing 1977), agree that an initial demonstration of resolve is important, but must be followed by conciliatory gestures. And finally, much of the literature on bargaining in a prisoner's dilemma (Axelrod 1981; Oye 1985) emphasizes the importance of beginning with conciliatory gestures and escalating as necessary in response to the opponent's demands.

**H4** *War will be more (less) likely when states make high demands in the first bargaining round.*

**H5** *War will be more (less) likely when states decrease their demands through bargaining rounds.*

**H6** *War will be more (less) likely when states reciprocate the escalation (or de-escalation) of demands.*

### **State-Level Hypotheses**

Drawing on the literature on the democratic peace literature (Maoz and Russett 1992), democratic success (Reiter and Stam 2002; Downes and Sechser 2012), and related literatures on regime type and foreign policy behavior (Gelpi, Feaver and Reifler 2009), we hypothesize that:

**H7** *Pairs of states with democratic governance structures will be less likely to engage in war with one another.*

**H8** *The bargaining choices of democratically accountable leaders will be closer to the preferences of their advisors than the choices of autocratic leaders.*

**H9** *Democratically accountable leaders will be more likely to be removed from office if they initiate a war.*

**H10** *Democratically accountable leaders will be more likely to be removed from office if they initiate an unsuccessful war.*

**H11** *Opponents will be more likely to comply with the bargaining demands of democratically accountable leaders.*

### **Conclusion**

The literature on the causes of war has stubbornly resisted moving toward consensus. For example, decades-long debates over the impact of systemic polarity and democratic governance on the onset of war have failed to yield robust conclusions about the theoretical mechanisms that underpin widely observed empirical patterns of conflict. One of the key reasons for the lack of scientific progress in this area has been the “fundamental problem of causal inference” (Holland 1986), the problem of unobserved confounding. Both of these problems are endemic to both qualitative and quantitative observational studies of war.

We seek to move beyond this impasse by taking the study of war “into the lab.” We recognize that experimental laboratory studies of decision-making have important limitations, especially regarding questions of external validity. But this point of weakness is the very strength of the

many observational studies already in existence. Thus we do not propose going to the lab as an alternative to the more typical research strategies used to study war, but rather as a complement to them. In particular, experimental studies of bargaining have the ability to test causal claims about the theoretical mechanisms at the core of the literatures on system structure and on the democratic peace. We believe that the ability to isolate and test these mechanisms is what is most needed to advance our understanding in these areas.

One of the principle limitations in the application of experimental methods to the study of war has been the relatively poor fit between the typical bargaining games in the behavioral economics literature—such as the prisoners’ dilemma or divide the dollar—and the problem of war onset as articulated by international relations theorists. From the perspective of international relations theory, for example, the crux of the decision regarding war focuses on a choice between a non-violent negotiated settlement and uncertain result of using violence to achieve one’s ends. While the prisoners’ dilemma captures certain elements of trust and cheating that play a role in such bargaining, most of the dimensions that characterize decisions regarding war—including the potential for force—are not incorporated in the game.

We addressed this limitation by constructing a simple laboratory simulation that captures most—but not all—of the key components of war as articulated by much of the literature on international relations. Specifically, our game incorporates the common assertions that: 1) war is costly, 2) war is always an available policy, 3) war can occur by chance, 4) war has uncertain outcomes, and 5) the spoils of war are cumulative. Importantly, one aspect of war that we are unable to capture in the laboratory context is the impact of alliances and interstate communication on war. We do not dispute the importance of these influences on the onset of war, however, we do not include them in our approach because open communication between subjects in the lab can too easily create the opportunities for collusion among the subjects against the experimenter.

Having developed a basic simulation of war and interstate bargaining, we developed two key modules that can be experimentally manipulated in order to gain leverage on testing mecha-

nisms behind the outbreak of war. Specifically, we developed a polarity module and a democracy module that will allow us to test the mechanisms at the root of many of the prominent theories of systems structure and conflict as well as the democratic peace. While these modules are comprised of simple manipulations of the laboratory context, we believe that they accurately capture the key mechanisms at work in these broad theoretical and observational literatures.

Finally, we would note that in addition to these two experimental modules, our approach will allow us to expand the scope of our study further. One promising area for further expansion is the role of individual level cognitive and psychological characteristics on the outbreak of war. The list of potential hypotheses for this study is beyond the scope of a single article, however, we plan to select some of the more prominent—and promising—dimensions of individual personality for study in our second wave of experiments. For example, the literature on political psychology is full of arguments and expectations about the impact of personality characteristics on the incidence of violence. One of the principal advantages of our experimental design is that it allows us to test many of these expectations in ways that cannot be addressed through observational data. For example, a in the 1960's and 1970's large literatures in political psychology investigated the impact of personality traits such as narcissism and paranoia Robins and Post (1997). While interesting, these studies are severely limited by the difficulty of measuring personality characteristics at a distance. The incorporation of a simple pre-experimental survey will allow us to select participants on the basis of differing personality dimensions and ensure their assignment across treatment categories. In doing so, we will be able to gain insights about the causal impact of leadership personality that have eluded many previous studies.

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