The Credibility of Public and Private Signals: A Document-Based Approach

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Abstract

Crisis bargaining literature has predominantly used formal and qualitative methods to debate the relative efficacy of actions, public words, and private words. These approaches have overlooked the reality that policymakers are bombarded with information and struggle to adduce actual signals from endless noise. Events are therefore more effective than any diplomatic communication in shaping elites' perceptions. Moreover, while ostensibly "costless," private messages provide a more precise communication channel than public and "costly" pronouncements. Over 18,000 documents from the Berlin Crisis of 1958-1963 reflecting private statements, public statements, and White House evaluations of Soviet resolve are digitized and processed using statistical learning techniques to evaluate these claims. Results indicate that costly actions have greater influence on White House beliefs than either public or private statements; that public statements are noisier than private statements; and that private statements have a larger effect on evaluations of resolve than public statements.

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Introduction

Scholarship on international relations has long discussed the differing effects, if any, between public and private forms of diplomacy. Following the work of Schelling (1966), scholars have broadly accepted that the credibility of threats made during crises is tied to their costliness. Despite the memorable nature of public gestures such as troop mobilizations, blockades, and the like, they are relatively infrequent. Much of the everyday administration of interstate diplomacy never rises to such dramatic heights, but instead remains in the realm of verbal exchanges.

In the last two decades, audience cost theory (Fearon 1994, 1997; Schultz 2001; Smith 1998; Tarar and Leventoğlu 2012) has extended the logic of costly signals to this more peaceful arena, suggesting that public statements carry more weight by means of tying hands thorough highly visible commitments (Schelling 1960; Snyder 1972).[1] Diplomatic communication that occurs out of view is relatively cheap, as actors suffer fewer sanctions for making claims that they do not see through. Another contingent of work has challenged the general premise, utility, and empirical tests of audience cost theory (Downes and Sechser 2012; Snyder and Borghard 2011; Trachtenberg 2012). Despite the active debate on the relative efficacy of public and private diplomatic signaling, few empirical studies beyond formal models and surveys have firmly put this comparison to a test, nor have they ascertained whether private channels can be just as costly as public ones (Kurizaki 2007).

Costs are a dimension to shaping a signal's credibility, but they are certainly not the only one. Many works on crisis bargaining assume all sides are focused a specific signal in question, and have abstracted away from the actual informational environment in which signals are sent—one that is defined by tremendous volumes of information and purposes that make it difficult to separate actual signals from the commotion of everyday governance. Scholars have often overlooked how levels of *noise* vary across different forms of diplomatic signaling. This is a critical and consequential distinction. In the frenzied setting of real-life diplomacy, private statements are a more direct and concise manner in which states can communicate. The ability to ostensibly tie one's hands through a public statement is undermined by the higher degree of noisiness that these public messages must overcome to be perceived as credible, or perceived at all.

[1] While these theories were originally developed with crisis bargaining in mind, subsequent research has extended the logic of using audience costs as bargaining leverage more broadly (Leventoğlu and Tarar 2005).

In this paper, we use the Berlin Crisis of 1958-1963 as a testing ground for these claims. Full sets of declassified documents provide a detailed, comprehensive, and uncensored view of the United States government's evaluations of threat during this period, which was arguably one of the most dangerous times for American—if not global—security. We digitize, process, and analyze over 18,000 documents from the Department of State, Foreign Broadcast Information Service, and White House to create dynamic data on private and public diplomatic signals sent from the Soviet Union and East Germany to the United States, as well as a measure of American evaluations of Soviet intents with respect to Berlin. These weekly-level data allow for a uniquely detailed investigation of conflict dynamics that other studies have been unable to accomplish.

The new resources collectively paint a picture that challenges some primary facets of contemporary crisis bargaining theory. Three findings are especially salient. First, the intense scholarly debate about the relative effects of public and private diplomatic signals may be overstated. In the shadow of costly material actions, neither public nor private statements prove to have a substantively noteworthy effect on shaping American perceptions of threat. Second, private diplomatic statements are more focused that public statements. Third, contrary to common expectations in costly signaling literature, *private statements are more effective than public statements in affecting the perceived credibility of threats.*

This study makes two primary and co-equal contributions. First, we propose an alternative set of theoretical mechanisms for why private diplomatic signals are non-trivial and perhaps more useful sources of information. Second, we present the first systematic and quantitative analysis of the competing effects of different signals during crisis diplomacy. We not only challenge some implications of costly signaling theory, but also establish a framework that can be applied to other crises, opening the door to more empirically-driven scholarship on the machinations of interstate interactions.

The Transmission of Signals

Signals are statements or actions that convey information with the intent to influence a receiver's image of the sender (Jervis 1976). During a crisis, adversaries send each other signals about their intentions with hopes of reaching a more favorable bargain for themselves.

Signals do not always succeed in transmitting an intended message. The sender and the receiver each face unique obstacles in realizing this goal. Because senders have incentives to misrepresent their resolve and engage in cheap talk, they face a challenge of making their signals or threats credible to a receiver. This leads to the well-established rationalist claim that signals are a more credible reflection of private information when they are costly (Schelling 1966). Such costs can emerge in two ways: either through tying hands or sinking costs. The former reshapes costs for future decisions, while the latter is an immediate burning of material resources (Fearon 1997).

This distinction typically breaks down into a distinction of words versus deeds. Words can be separated even further to public and private statements. This is especially salient for audience cost theory, which suggests that public declarations carry much more credibility because they tie hands and implicate potential future costs for backing down (Schultz 2001; Smith 1998; Tomz 2007).[2]

This standard logic of costly signaling predicts that private statements should be the least credible form of signal, as they implicate neither form of cost. While both public actions and public statements incur costs, hand-tying is predicted to be more credible during times of crisis than cost-sinking (Fearon 1994; Fuhrmann and Sechser 2014). As such, public statements or threats (hand-tying) should be the most credible form of signal.[3] After that, public actions (cost-sinking) should be more credible then private statements. We thus get the following ranking of signal credibility:

$$\text{Private statements} < \text{Actions} \leq \text{Public statements}$$

Some recent literature argues that private statements can also be costly because policymakers value maintaining a reputation for honesty and retaining the ability to avoid public escalation (Guisinger and Smith 2002; Kurizaki 2007; Ramsay 2011; Sartori 2002, 2005; Yarhi-Milo 2013).[4] These claims complicate the logic and implications of costly signaling theory, and make predictions unclear or more dependent on the specific crisis's context.

[2]This distinction between words and deeds also has precedent in literature that challenges audience cost theory. Levy et al. (2015) and Snyder and Borghard (2011), for example, debate the merits of audience costs by talking about consistency between a leader's words and deeds. This implies that audience costs depend on the relationship between public statements and subsequent actions taken.

[3]Fearon's discussion acknowledges that these are ideal types. Actions are likely to also have some residual hand-tying effects. Nonetheless, our discussion of military actions as mainly cost-sinking has precedent; see Fearon (1997) and Slantchev (2011).

[4]Seminal economic models also show how cheap talk can be informative (Crawford and Sobel 1982; Farrell and Gibbons 1989).

Moreover, a signal only impacts behavior or beliefs when a receiver processes it. While rational approaches tend to assume that signals are common knowledge and properly understood (Kertzer 2016; Kurizaki 2016), we know that receivers do not always interpret a sender's signal in the intended manner (Lebow 1981; Levy 1983; Quek 2016; Snyder and Diesing 1977). Explanations for signal misperception generally stem from psychological and cognitive approaches that focus on the individual. Cognitive biases and limitations of the human mind result in bounded rationality and misinterpretation of observed information (Simon 1947). In many cases, this misinterpretation is non-random and hews to the biases and predispositions of the particular receiver, fueling belief perseverance and confirmation bias (Duelfer and Dyson 2011; Jervis 1976; Mercer 1996; Shapiro and Bonham 1973).

A Noisy Intersection

Costly signaling theories are right to point out that senders have multiple channels of communication with a receiver, and that these channels likely differ in their impacts. Studies of misperception correctly note that receivers do not always properly interpret these signals. These two perspectives focus on different actors and forms of uncertainty, and are therefore not mutually exclusive (Kurizaki 2016). However, little has been done to bridge the gap between them. We particularly lack an understanding of how the communication channel used to send a signal can impact its (mis)perception, and thus, its credibility.

A signal's effect not only rests with its costliness or its relation to an individual's predispositions, but also on how well its key message stands out from the background. A signal must overcome *noise*—that is, fluctuations of false or irrelevant information that hinder perception of an intended signal.

We are not the first to suggest that noise impedes signaling. A host of studies, mostly using formal models, have analyzed how noise can complicate or change strategic interactions in bargaining (Fey and Ramsay 2007; Handel 1977; Johns 2006; Kurizaki 2016; Meirowitz and Sartori 2008; Slantchev 2006). Nevertheless, these works only model one channel of information, and thus, one configuration of noise.

We contend that the three aforementioned channels—actions, public statements, and private statements—vary in the degree of noise surrounding their signals, which influences policymakers'

ability to process them. Such distinctions rely on an understanding of the real-world practice and nature of diplomacy. Despite the risk of making our view of crisis bargaining less parsimonious, the implications we derive challenge conventional wisdom about the credibility of signals.

Diplomatic Signals in Practice

Signals can only affect a potential receiver's beliefs when they are noticed and then interpreted.[5] The quantity and quality of signals affect each of these steps.

Quantity

Most rationalist studies of crisis bargaining presume that a signal arises in a vacuum so that both the sender and receiver recognize and evaluate it. This seems innocuous, but all signals are part of a larger flurry of bureaucratic, political, and administrative activity. In such a frenetic and multidimensional environment, policymakers constantly struggle to keep up with the deluge of incoming raw information—not only for one single issue, but many at once.[6] Kissinger (1979) makes this point:

> High office teaches decision-making, not substance. Cabinet members are soon overwhelmed by the insistent demands of running their departments. On the whole, a period in high office consumes intellectual capital; it does not create it.... The novice Secretary of State thus finds on his desk not policy analyses or options but stacks of dispatches which he is asked to initial and to do so urgently, if you please. He can scarcely know enough about all the subjects to which they refer, or perhaps about any of them, to form an opinion. (30-31)

Intelligence communities are acutely concerned with the ability to filter signals from noise, which is commonly referred to as "the Roberta Wohlststter problem" (Dahl 2013; Wohlstetter 1962).[7] Larger amounts of data can lead to information overload (Simon 1947), which engenders

[5] Wickens (1992) makes a similar point regarding human information processing.

[6] Of 172 National Security Council meetings between 1958 and Kennedy's assassination in November 1963, only 13 (about 7%) involve explicit discussion of Germany or Berlin. Of these 13 meetings, only two focus solely on the topic.

[7] *The 9/11 Commission Report* also makes heavy reference to Wohlstetter's original work on the Pearl Harbor attack.

selective attention and incomplete updating (Jones and Baumgartner 2005; Yarhi-Milo 2014), all of which causes poorer decision-making (Holsti et al. 1964; Schroder et al. 1967).

The problem of processing too much information becomes exacerbated as more intermediaries become involved in compiling and filtering signals to send up the chain of command (Finel and Lord 1999). Each overwhelmed individual is less likely to correctly find, interpret, and report signals to their superiors, especially during times of crisis (Snyder and Diesing 1977). Even at the highest levels of decision-making, actors that ostensibly get the most filtered versions of information—including the National Security Adviser and the Secretary of State—are hard-pressed to tread water (Brzezinski 1983).

In these cases of informational overload, much more visible and vivid signals will be likelier to break through the noise (Vertzberger 1990; Yarhi-Milo 2014). We would thus expect that policymakers take greater notice of material actions, which are less frequent and more conspicuous, rather than any statements. This motivates the first hypothesis:

Hypothesis 1 Public and private diplomatic statements both have smaller effects on evaluations of resolve than material actions.

Quality

Hypothesis 1 predicts that public and private statements are less influential on elites' beliefs than actions, but this does not suggest that both forms of diplomatic communication are equally (in)effective. Audience cost theory avers that public statements are better suited to tie leaders' hands and thus generate credible commitments (Fearon 1994; Schelling 1966; Schultz 2001; Tomz 2007). However, in a more realistic diplomatic environment, public signals have two characteristics that undercut this assertion.

First, and related to the previous discussion, public pronouncements are relatively high in volume. The Central Intelligence Agency's Foreign Broadcast Information Service (FBIS), to which we return later, was established to collect and translate all publicly available information such as official statements, press releases, and radio broadcasts emanating from adversarial nations (Roop 1969). For the issue of Berlin alone, the FBIS records over 10,700 entries from the Soviet Union between 1958 and 1963.

Second, public statements must inevitably deal with multiple audiences. A sender may intend to relay a specific message to a specific receiver, but nothing can stop other domestic or international actors from noticing, processing, and acting upon this signal (Lake 2010/11; Vertzberger 1990). For example, Nixon's "silent majority" speech on November 3, 1969 was an appeal to the American public to support peace with honor in the Vietnam War. This did not stop the North Vietnamese from hearing the speech and accusing the United States of using "perfidious tricks" to purposefully undermine secret peace talks taking place at the same time. In public statements of their own, the North Vietnamese called Nixon "stupid and naive" and said his speech was "a pack of lies to justify the war of aggression against the Vietnamese people."[8]

Despite the inability to limit who sees a public statement, a government will still endeavor to communicate with particular audiences. A state's desire to communicate with each of these different constituencies will likely produce an overall set of messages that appear unfocused and perhaps contradictory (Jönsson 1996; Mitchell 2000). Even when a public declaration appears strident, the fact that it comes from such a mixed and multipurpose pool can make decision-makers discount its relevance. A wide spectrum of statements also worsens the odds of misperception, since individuals can more easily engage in their own forms of confirmation bias.

In that context, private signals prove useful because they allow states to send more direct, clear, and selective messages of intent to a receiver. Diplomatic communities emphasize the importance of the *tête-à-tête*—private and candid "head-to-head" conversations—as a manner to communicate without distractions or political theater (Perlmutter 1975; Russell 2000). This exact line of reasoning motivated the now-famous exchange of letters between President Kennedy and Chairman Khrushchev in late 1961, as both leaders attempted to address immense anxieties and escalating rhetoric regarding Berlin. Responding to Khrushchev's initial letter on September 29, Kennedy wrote back the following on October 16:

> I am gratified by your letter and your decision to suggest this additional means of communication. Certainly you are correct in emphasizing that this correspondence must be kept wholly private, not to be hinted at in public statements, much less disclosed to the press.... I think it is very important that these letters provide us with an opportunity for a personal, informal but meaningful exchange of views. There are sufficient channels now existing between our two governments for the more formal and official communications and public statements of position.... Neither of us will be induced by a letter

[8]See "Hanoi Charges Nixon Duplicity on Secret Talks" in the *New York Times*, November 7, 1969.

> to desert or subvert his own cause. So these letters can be free from the polemics of the "cold war" debate. That debate will, of course, proceed, but you and I can write messages which will be directed only to each other.

A more detailed historical case may provide more evidence. On October 20, 1973, Kissinger arrived in Moscow and agreed to establish a ceasefire to stop the Yom Kippur War, which had erupted two weeks earlier. After only one or two days, Israel violated the ceasefire and proceeded to encircle the Egyptian Army—an event that both the Americans and Soviets had sought to avoid. Kissinger feared that the Soviets would see this as a purposeful act of deception (Blechman and Hart 1999). Indeed, the Soviets alerted their forces, and Brezhnev publicly stated that the USSR would unilaterally impose a ceasefire if the United States chose not to join the effort. Around that time, American intelligence indicated that a Soviet ship carrying radioactive material was near American vessels in the Mediterranean.

At 11:41 P.M. on October 24, Nixon's administration publicly put all military commands on high alert, or DEFCON 3, with the aim of showing American resolve to the Soviets (Sagan 1985). By October 25, the global DEFCON 3 was widely reported in the media (Kissinger 1982). Brezhnev and the Politburo were perplexed by this seemingly unprovoked action. Brezhnev had no intent of directly engaging in conflict, and he believed that the United States would read through the lines of his fierce public rhetoric. Moreover, many of the puzzled Soviet leaders concluded that Nixon's alert was designed for domestic political purposes to distract from the unraveling Watergate ordeal, while others underestimated the severity of a DEFCON 3 alert (Lebow and Stein 1994). Had it not been for Brezhnev's personal opposition toward military escalation, the Politburo was likely to have mobilized more forces in response to the nuclear alert.

Both the United States and Soviet Union misread the intent of their adversary's public signals. It was only through private communications, free of posturing and second-guessing, that the standoff was peacefully resolved.

Private statements may therefore be relatively more focused and informed than public statements. This argument rests on an observable mechanism: The need to cater to multiple audiences will cause elites to produce an enormous number of public signals and interpretations that, when considered together, generate a noisier overall impression than that produced through private channels alone.

This discussion points to two related hypotheses.

Hypothesis 2 Public statements feature greater variance across signals than private statements.

Hypothesis 3 Private statements are relatively more effective than public statements in shaping evaluations of resolve.

The theoretical foundation of Hypothesis 2 is, to our knowledge, unique in contemporary theories of crisis bargaining. Although some scholars have pointed out that diplomatic signals are generally harder to interpret than many rationalist theories presume (Barston 1988; Lebow 2001), no relative distinctions of this sort have been made between public and private channels. Most theoretical arguments on public and private diplomacy tend to be based on costs. Little to no emphasis is placed on practical and inadvertent considerations of noise in diplomatic signaling.

In summary, our discussion produces a ranking of signal credibility that stands in direct contrast with costly signaling and audience cost theories:

$$\text{Public statements} < \text{Private statements} < \text{Actions}$$

Our argument provides another compelling and practical justification for why private diplomacy exists and remains valuable. Perhaps due to the compellingly intuitive strategic logic of public hand-tying, even scholars promoting the importance of private diplomacy only claim that private communications can be *just* as effective as public ones *under certain circumstances*. Our focus on the noisiness of signals leads to a stronger claim.

Data

We evaluate our hypotheses using four sets of data that directly correspond to material actions, private statements, public statements, and elite assessments of these signals. The Berlin Crisis of 1958 to 1963 serves as our testing ground.

A document-based, within-case research design provides the most direct test of our claims.[9] Declassified documents present raw material to capture the concepts of interest to our framework at a level of temporal and conceptual precision that would not be feasible in a larger-N design. The application of supervised learning methods can also reveal insights that may be missed, either by bias or oversight, through a purely qualitative approach. We will revisit this final point later.

The Berlin Crisis

The Berlin Crisis was possibly one of the most serious periods of sustained tension in the recent history. The struggle over Berlin engendered grave concerns about the outbreak of nuclear war.

After the conclusion of World War II, four victorious powers—the United States, the United Kingdom, France, and the Soviet Union—divided the German capital city of Berlin into four sectors. The Soviet sector stood alone as East Berlin, while the remaining three were collectively considered West Berlin. The rest of Germany was also split on similar terms. Berlin (and thus, the Allies' West Berlin) lay deeply embedded in East Germany, more than 100 miles behind Soviet lines. The Western powers originally established a presence in Berlin because they assumed that all of Germany would be overseen collectively. However, mounting Cold War tensions increased the salience of the boundary between West and East Germany and made Western presence in Berlin increasingly troublesome and geographically symbolic (Trachtenberg 1999).

For many years after, but especially between 1958 and 1963, the right of Western access to West Berlin was treated as a fundamental testing ground of resolve. In a letter to Secretary of State John Foster Dulles, the American ambassador to West Germany James B. Conant went as far as to call Berlin a "superdomino" for which American weakness would reverberate across the entirety of Germany and Europe (Office of the Historian 1992, 376-381).

The Western allies began efforts to reform West German currency in 1948. At that time, the Soviet Union initiated a blockade that closed ground routes in and out of West Berlin, forcing the three allies to deliver supplies using the Berlin airlift. In 1949, the Western allies helped found the Federal Republic of Germany, or FRG (which technically excluded West Berlin, even though these sectors publicly aligned themselves with the West), and the Soviets helped establish the

[9] Trager (2017) uses a similar strategy to analyze diplomatic communications among the European great powers between 1900 and 1914.

German Democratic Republic, or the GDR. The GDR declared its capital to be East Berlin. The Western powers refused to recognize what they saw as an intentionally provocative choice. The FRG established its capital in Bonn.

Restricted access to West Berlin underlined the escalated tension between 1958 and 1963.[10] Leading up to 1958, Soviet Premier Khrushchev had grown weary of diplomatic tap-dancing regarding Berlin, which appeared to be going nowhere (Kempe 2011). On November 10, 1958, Khrushchev made his first ultimatum, publicly granting Eisenhower and the Western allies six months to withdraw from and demilitarize their share of Berlin (Williamson 2012). If this did not occur, the Soviets would turn all lines of communication and control over to East Germany—a party known to be more recalcitrant than the Soviet Union, which could threaten all Western access to West Berlin.[11] As early as March 1959, Acting Secretary of State Christian Herter (working in the stead of an ailing John Foster Dulles) indicated that the United States would have to issue the "ultimate threat" of nuclear war to defend its interests (Burr 1994).

By May of 1959, the Western allies had remained resolute, and Khrushchev had withdrawn his ultimatum. A meeting of the four foreign ministers in July failed to make significant progress on the Berlin question, but ended on a note of mutual desire for a peaceful resolution to be further discussed at a Paris summit planned for May 1960. However, due to the U-2 Incident on May 1, in which an American reconnaissance plane was shot down over Soviet territory, this meeting was dead on arrival (Barker 1963).

The Kennedy administration took office in January 1961 and initially adopted a reactive stance on Berlin. A meeting in Vienna between Khrushchev and Kennedy on June 4, 1961, started on friendly terms but quickly devolved when Khrushchev, according to Kennedy himself, "went berserk" (Smyser 2009, 65). This resulted in a second Soviet ultimatum: If the Western allies did not immediately agree to a peace treaty proposing reunification on Communist terms, the Soviet

[10] Many references focus on late 1961 as the Berlin Crisis. We use the somewhat more inclusive view, which treats Khrushchev's ultimatum as the key trigger event. Nevertheless, our main findings are equally valid for this shorter period.

[11] Zubok (1993) refers to primary documents in order to conclude that this declaration was "ninety percent improvisation" (12), apparently uttered with hopes to still resolve the German issue peacefully. However, on November 27, the Soviet Union subsequently sent the Western allies a diplomatic note formally restating these terms (Newman 2007).

Union would sign a separate peace treaty with East Germany, cutting off access to West Berlin.[12] Berlin contingency planners seriously discussed the possibility of nuclear weapons (Williamson 2012, 215). On July 25, 1961, President Kennedy even made a television report to the nation in which he explained Soviet attempts to cut off access to West Berlin, bringing up the imminent threat of nuclear war and discussing measures to make sure that all American citizens had access to fall-out shelters.[13]

On August 12, 1961, East German head of state Walter Ulbricht authorized an order to close the border between West and East Berlin and to create a wall, stemming large westward migrations of East Germans (Harrison 2011). A barbed wire fence stretched across the border was later replaced with the notorious concrete barrier.

In the following months, American forces experienced harassment at checkpoints that crossed between East and West Berlin. A slowly escalating trend of activity, often resembling a game of chicken, boiled over at Checkpoint Charlie on October 22, 1961. Three days of posturing peaked when Soviet and American tanks sat pointed at one another, 100 yards apart, before both sides backed down. This stand-off was one of the most dangerous moments of the Cold War, at least in Europe (Trauschweizer 2006).

From late 1961 through 1962, the United States government engaged in sporadic negotiations with both its Western allies as well as the Soviets. In January and March 1962, Secretary of State Dean Rusk met with Soviet Foreign Minister Andrei Gromyko in a series of abortive talks, and attempts to negotiate a solution ended by the summer. The Soviet Union's retreat from the Cuban Missile Crisis, which followed months later, irrevocably dampened Khrushchev's clout and diluted Soviet diplomatic leverage regarding Berlin. This loss of face helped remove remaining obstacles to the Limited Nuclear Test-Ban Treaty, a years-long effort that had been held up by both parties linking concessions to the Berlin question. The treaty was signed on August 5, 1963 and went into effect on October 10, 1963.[14] Although the wall would not fall for another 36 years, the most heightened period of tension regarding Berlin had passed.

[12] While the Western powers maintained a resolute position regarding access to West Berlin, Kennedy undermined himself by suggesting the the US was open to a permanent division of Berlin. This made his subsequent statements less credible to the Soviets (Carmichael 2011).

[13] This address occurs more than a year before the Cuban Missile Crisis, as well as one month before construction begins on the Berlin Wall.

[14] In October 1964, Khrushchev was quietly deposed and replaced by Brezhnev.

This overview indicates at least two reasons why the Berlin Crisis is an ideal case for studying crisis diplomacy. First, this five-year period is one of substantial historical import, punctuated by multiple moments that could have potentially sparked major hostilities involving nuclear weapons. Although the term "Berlin Crisis" suggests a single period of hostility, the time span is much better characterized by several distinct and significant flash points, as well as sustained periods of relative calm, that each provide evidence on the different effects of public and private diplomacy during the everyday administration of policy-making. Moreover, even though the average level of perceived resolve by American policymakers during this time may be considered constant and perhaps higher than usual, actual perceptions of threat clearly fluctuate over time. Second, studying the Cold War and a location that served as a clear geographical and symbolic focal point for this period provides a best-case scenario for finding larger effects of diplomatic signals in shaping perceptions.

Beyond its substantive import, the Berlin Crisis is well-documented in archival collections and is almost fully de-classified due the passage of several decades.[15] This allows us to obtain a comprehensive set of documents that reflect the uncensored and instantaneous messages and thoughts of the policymaking elite, without retrospective, censored, and/or historical biases. To our knowledge, this sort of sweeping document-based approach does not exist in studies of international security.

Data Sources

Our analysis requires data on four concepts: actions, private statements, public statements, and White House assessments of these signals. The last three rely on archival documents. We take each of these in turn.

Actions

We account for material actions from the Berlin Crisis using headlines and abstracts from the *New York Times* (NYT).[16] Between January 1, 1958 and December 31, 1963, the *New York Times* had 14,178 articles related to Berlin. Of these, 1,601 articles used one of several terms that could reflect

[15] Documents such as those used in this paper are mostly de-classified up until 1978. Due to the dilatory nature of declassification, many documents on Berlin were only released in the last two decades. A substantial collection of highly sensitive materials were released in 2011—the fiftieth anniversary of the Berlin Wall.

[16] This set of data does not rely on declassified documents.

material action and conflict. These include "suspend," "seize," "ambush," "raid," and the like.[17] We manually coded whether each of these 1,601 articles reported on costly military action reflecting hostility. Five types of events qualified: the erection of the wall (1); nuclear or missile tests (7); shooting down of a plane (1); a blockade (1); and detainment or halting of military convoys and transports (81). A total of 91 events emerge from these articles. The first plot of Figure 2 illustrates the frequency of these hostile military events at the weekly level.

Private Statements

Private diplomatic statements are captured through declassified telegrams from the U.S. Department of State (DOS), obtained at the National Archives II in College Park, Maryland.[18] These collections predominantly involve incoming messages from the United States Embassies in Bonn and Moscow, as well as the U.S. Mission Berlin.[19] These cables include summaries of private conversations, meetings with foreign government officials, and noteworthy information that the outposts send to the capital for discussion behind closed doors. They are not public reports.

We take several measures to ensure that we are only relevant private statements made by Soviets to the United States. First, we only used documents classified at the "Confidential" level and above.[20] 0.7% were unclassified and thus removed. Second, we exclude all outgoing cables. Third, we only utilize memoranda of conversation when they involve meetings with Soviet officials. Any contemporaneous records of intra-governmental meetings or deliberations, which do not reflect private diplomatic statements from the Soviet Union to the United States, are omitted.

Public Statements

Records of public statements during the Berlin Crisis come from the Foreign Broadcast Information Service (FBIS). The FBIS was an open-source intelligence system originally housed in the Central

[17] Many of these terms come from the Conflict and Peace Data Bank, or COPDAB (Azar 1982). While COPDAB presents ready-made data for hostile activity between superpowers, we create new event data for two reasons. First, COPDAB was released decades ago and provides no citations for its sources. Second, COPDAB may be incomplete. In Appendix G, we provide more information on these issues but also show that most of our main findings are intact using COPDAB.

[18] Appendix A has a full listing of all collections.

[19] Mission Berlin was the State Department's substitute for an embassy in West Berlin.

[20] "Confidential" is the lowest classification level for government information and documents. This involves information for which "the unauthorized disclosure of which reasonably could be expected to cause damage to the national security that the original classification authority is able to identify or describe" (United States Department of State 2005, 2). Two levels exist above this: "Secret" and "Top Secret."

Intelligence Agency that recorded and translated foreign countries' official public statements made through radio and press agency releases. Policymakers sought to use this massive information stream to track how adversaries discussed recent events, as well as how the tone or content of all their statements reflected their intentions (Leetaru 2010). During the Cold War, the FBIS placed tremendous focus on tracking public Soviet statements. Images of the original English translations are available on-line via NewsBank.

Elite Assessments of Resolve

American elites' evaluations of the Soviet Union's resolve come from de-classified internal White House (WH) documents, collected from both the Dwight D. Eisenhower Presidential Library in Abilene, Kansas and the John F. Kennedy Presidential Library in Boston, Massachusetts. We gathered all archived collections categorized under "Berlin." Figure 1 shows how these sets of data map to our theoretical framework.

Both DOS and WH documents were individually photographed at these archives. All images were then processed using optical character recognition (OCR) software, which converted each image into computer-readable digital text.[21] Hand-written documents, few in number, were omitted from this process.[22] Online FBIS records include OCR-processed text in their metadata, which were extracted.

These data represent the most comprehensive coverage of the Berlin Crisis thus far. Moreover, practically all archived documents related to the Berlin Crisis are now de-classified. Although we cannot be completely certain that all sensitive documents are in our data, several observations suggest this is not a serious issue. First, the collections include red inserts which indicate when

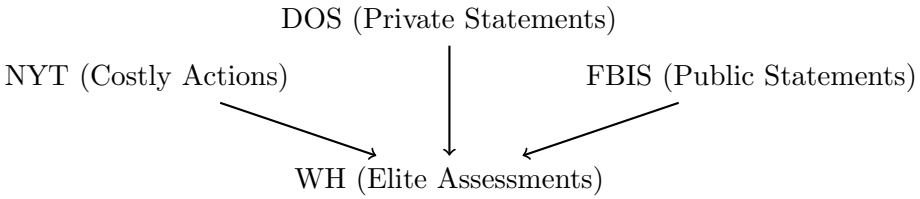


Figure 1: Diagram of the dynamics and sources analyzed in this study.

[21] OCR accuracy rates at the character level had a mean of 98.0% and median of 99.6% per page. At the word level, accuracy rates had a mean of 95.8% and median of 98.3%.

[22] This is theoretically motivated. Even during the 1950s, official documents meant for circulation were always typed.

entire documents are or were classified. All of these documents are now accessible. Second, less than 1% of declassified documents featured any form of sanitizing at the paragraph or sentence levels. Third, the documents that are currently available reveal secrets that would have been incredibly sensitive at the time. This includes memoranda discussing detailed logistics for an American first strike against the Soviet Union, aimed at initiating a general war.[23] It is hard to envision documents that could contain more delicate information.

Measuring Signals and Perceptions

We have described the collection of raw diplomatic data on public statements, private statements, and elite assessments. These must be translated into a quantitative measure that gauges the resolve of the Soviet Union and East Germany/Berlin. We generate measures of observed Soviet resolve through their public and private diplomatic statements, captured respectively in the FBIS and DOS records. For these two collections, we seek an indication of whether each memorandum or publicly released message reflects Soviet resolve—that is, willingness to use force to achieve its aims in Berlin. In order to see whether these signals had any effect on evaluations of resolve, we would then turn to White House documents to see whether policymakers appear to express concerns regarding Soviet resolve.

It is worth noting that while American policymakers constantly struggled to appraise Soviet resolve by interpreting diplomatic signals, they had a much clearer understanding of Soviet capabilities, which were more tangible and easier to spy upon and scrutinize. National Intelligence Estimates from 1950 to 1983 attest to the detailed knowledge that the United States had regarding the Soviet Union's material possessions throughout the Cold War.[24] Both during and after the Cold War, intent has always been difficult for intelligence gatherers to estimate (Fitzgerald and Packwood 2013).

Given the enormous number of documents involved, coding by hand would be difficult but not impossible. This study nevertheless uses supervised statistical learning models to automate much of this process. We do so for three reasons. First, manually classifying tens of thousands of documents increases the likelihood that coding becomes inconsistent and colored by a researcher's personal

[23] Memorandum from Carl Kaysen to General Maxwell Taylor, Military Representative to the President. "Strategic Air Planning and Berlin." September 5, 1961.

[24] Steury (1996) provides many of these estimates.

expectations. Second, automated coding may help us find striking patterns that run counter to conventional wisdom, none of which would be discovered if conventional wisdom dictated the coding process. Third, one of our goals is to demonstrate a procedure that can adapt to even larger sets of documents. Unlike statistical learning methods, manual classification is not scalable.

Supervised learning involves manually coding a much smaller random sample of the data, and then training a statistical model to identify what features of each observation best explain this manual coding. The model is then cross-validated to assess how capably it makes predictions on additional manually coded data that was not used to train it, which ensures that the model is not overfitting the training data. Conditional on performing sufficiently well, this model is then used to predict the variable of interest for the remaining observations for which the value of the variable is unknown.

The technical details of this process are explained elsewhere.[25] Here, it suffices to say that the three pools of raw text are converted into quantitative data. To do this, cables/releases are first split into 300-word segments to ensure that long documents are analyzed more properly. The text in each segment undergoes standard pre-processing. This includes the removal of stop words such as "a" and "the," and the stemming of words into tokens (e.g., converting "talks," "talked," and "talking" into "talk"). The number of remaining tokens in each segment is counted and recorded. This ultimately produces a document-term matrix for each collection of cables, where each row represents a 300-word segment, and each column contains how many times a token is used. These token counts are the main variables used to train the models and generated predicted values of Soviet resolve for each segment.

Coding Criteria

Each subset of training documents was classified for Soviet resolve, or more specifically, willingness to use force with respect to Berlin.[26]

Such statements typically fall into one of two categories: threats to close off the Western allies' access to West Berlin and threats to engage in armed conflict. These threats can be both explicit

[25] See Friedman et al. (2009).

[26] The authors and a third party produced two sets of codings. In terms of intercoder reliability, accuracies were 0.89 (DOS), 0.91 (FBIS), and 0.85 (WH); F_1 scores were 0.93 (DOS), 0.97 (FBIS), and 0.91 (WH). Discrepancies were resolved via further investigation and discussion, and these revised codings were used in the trained model.

and implicit. An explicit threat proposes shutting down access or initiating hostilities in concrete terms. Khrushchev's ultimatums are explicit threats, but declarations such as these are relatively infrequent. More common is an implicit threat, which vaguely intimate the possibility of either event, and does so using hostile language. For instance, a DOS document from February 9, 1962 conveys a Soviet message about West Berlin: "No matter how much US and its allies refer to their privileges of occupation, there can be no two opinions about this. This land and air space belong to GDR." An FBIS entry from August 2, 1961 warns: "Those who raise their arms against us will be destroyed on their own territory." These classifications are based on the specific context of the Berlin Crisis, which permits more precise measurement.

Two White House documents illustrate how elites perceive Soviet resolve conveyed through private and public statements. We use examples mentioning direct and specific signals to best illustrate our process, but note that White House documents that infer Soviet resolve more generally also qualify.

Private Statement: *August 24, 1961*

> [In a private conversation,] Khrushchev said that the West was now threatening to cut off trade and even to go to war if the Soviet government signed a peace treaty. If other countries strengthened their military forces in Germany, the Soviet Union would do the same and could always have forces in a position to protect the territory of its ally the GDR. But in any case, modern wars would be fought with nuclear weapons. The Soviet Union and also the USA would no doubt lose tens of millions but the Soviet Union would certainly go to war if the Western Allies tried to force their way through to West Berlin after the Soviet Union had signed a peace treaty with the GDR. It would however be ridiculous for two hundred million people to die over two million Berliners.

Public Statement: *November 1, 1961*

> In his [Khrushchev's] July 8 speech, he attributed motives of military pressure against the Communist Bloc. In response among other threats, he spoke of a 100 megaton super-H bomb which he said had been devised. From other reports as well, we learn that Khrushchev was especially stung by this speech. On August 7, Khrushchev made a speech in which he stressed the horrendous consequences of a nuclear war, a speech in this respect unusual for delivery to a domestic Soviet audience.

Table 1 summarizes all three sets of archival data. The hand-coded segments are processed using a predictive model that finds relationships between the tokens used in a segment and the segment's classification. Of many possible models, the balanced random forest model exhibited the best overall performance compared to several other alternatives.[27]

[27] Breiman (2001) and Chen et al. (2004) provide details on this method. Technical results from our analysis are Appendix C.

Collection	# Docs	# Segments	Hand-Coded
DOS	3,977	7,777	804
FBIS	10,715	13,577	503
WH	3,726	15,499	602

Table 1: Summaries of all three sets of archival data.

Predicted Data

The balanced random forest model is applied to the three full document-term matrices to create a predicted probability of each segment exhibiting signals or perceptions of Soviet resolve. Depending on the hypothesis tested, we either utilize this raw predicted probability or dichotomize it using a cutpoint of 0.5.[28]

Through this process, we generate three sets of time series data that reflect (1) expressions of Soviet resolve in private Soviet diplomatic statements; (2) expressions of Soviet resolve in public Soviet diplomatic statements; and (3) the White House elites' perceptions of Soviet resolve involving the Berlin crisis.

To ascertain the face validity of this new data, we identify eight key moments of tension or political importance during the Berlin Crisis. These include the following:

(a) 11/10/58: Khrushchev's first ultimatum

(b) 6/4/61: Vienna summit; Khrushchev's second ultimatum

(c) 8/13/61: Start of construction of the Berlin Wall

(d) 10/22/61: Checkpoint Charlie standoff

(e) 8/17/62: Killing of Peter Fechter at the Berlin Wall[29]

(f) 9/25/62: Berlin Air Corridor incident

(g) 10/10/63: 15-hour detainment of U.S. Army convoys

(h) 11/4/63: Autobahn Tailgate Crisis

Figure 2 displays the NYT action data, as well as the three sets of predicted data. The eight aforementioned events are marked. Both the collected and generated data aptly identify

[28] Appendix B provides example segments with predicted probabilities. Appendix C includes figures that illustrate the confidence intervals, using an infinitesimal jackknife bootstrap method (Wager et al. 2014) for each document based on this random forest model.

[29] Fechter was an East German that was shot while attempting to flee to West Germany by traversing the Berlin Wall. His death was one of the first involving the barrier. Many historical accounts of Berlin Crisis do not mention this incident, even though the death caused immense anxiety in West Berlin (as evidenced by the enormous spike in DOS measure). This emphasizes the risks involved with retrospectively identifying "important" events.

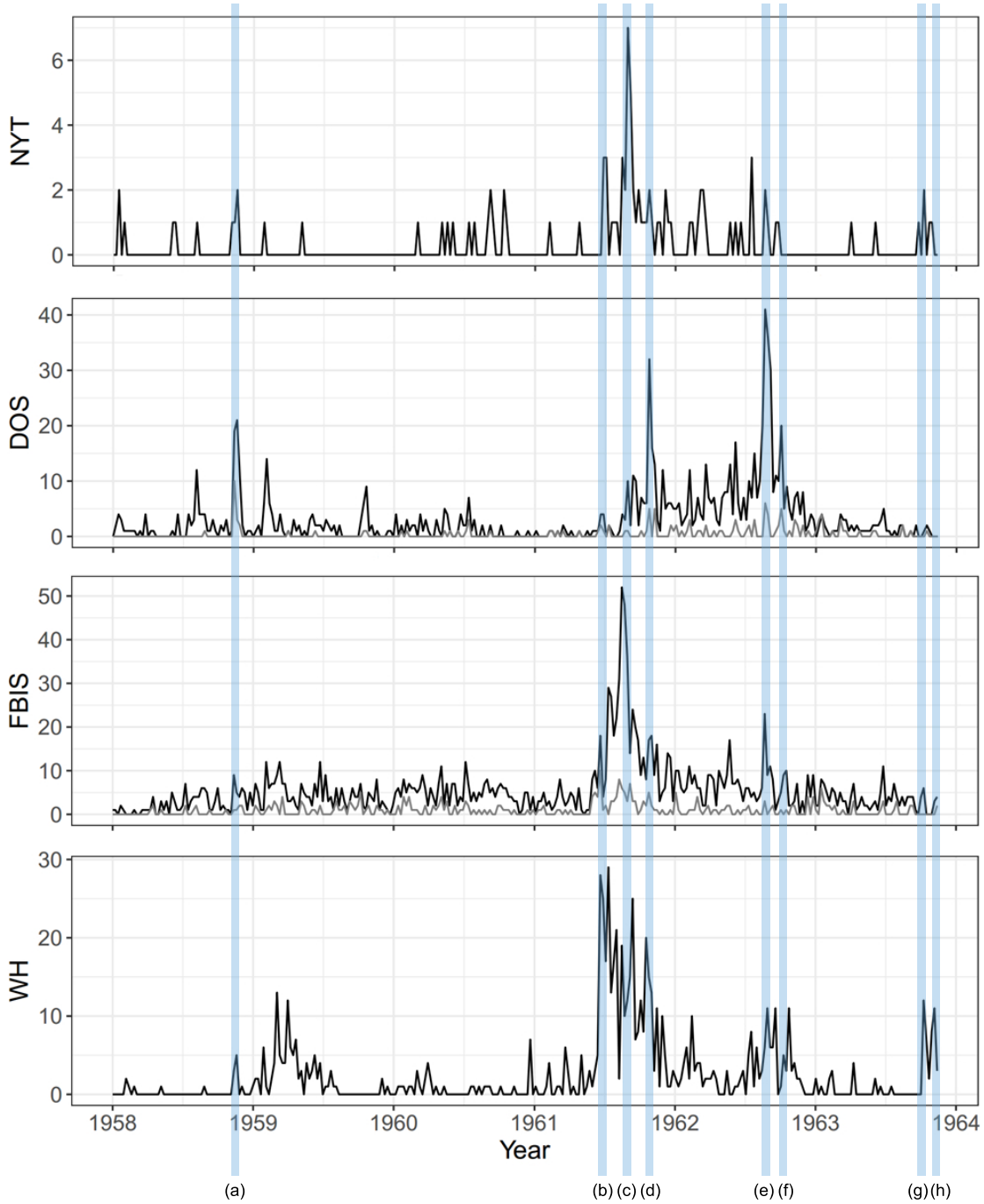


Figure 2: Number of documents predicted to express Soviet resolve in the three document collections, at the weekly level. For FBIS and DOS, light gray lines indicate measures based on documents only involving high-level officials. See the analysis for more details.

these qualitatively important moments, which increases our general confidence in the data's overall utility.

There may be some concern that using the entirety of the DOS and FBIS documents biases the results in our favor. It is unlikely that WH elites placed equal weight on every single statement made in private or particularly in public, so using all documents would artificially inflate noise. As such, we create filtered DOS and FBIS measures that only count documents with statements attributed to prominent Soviet entities. For both DOS and FBIS, we track only *high-ranking* individuals, which include Politburo members and other key Soviet officials. For FBIS, we create an additional intermediate measure based on *governmental* sources. This includes all high-ranking individuals, as well as official Soviet media outlets and spokespeople.[30] Figure 2 shows the high-ranking measures in light gray. Our analysis will generally focus on high-ranking DOS and FBIS measures, as they most closely reflect a plausible set of verbal signals that would be noticed by and raise concern among American policymakers.

Analysis

We now proceed to evaluate evidence related to the proposed hypotheses. We first address Hypothesis 2 regarding the noisiness of public and private diplomatic statements. We then turn to Hypotheses 1 and 3, which speak to the absolute and relative impacts of different signaling channels on elites' evaluations of Soviet resolve.

Variation Across Statements

Figure 3 displays overall distributions of predicted codings of Soviet resolve in public and private statements from high-ranking officials.[31] The two distributions are clearly not alike, that the distribution of FBIS documents is especially asymmetric, and that a greater proportion of private signals tend to be tied to higher levels of perceived hostility.[32]

[30] Appendix D has a full list of individuals, as well as counts of relevant document segments.

[31] Whenever we present analyses only based on measures using only high-ranking officials, Appendix E provides replications based on all available documents.

[32] A two-sample Kolmogorov-Smirnov test soundly rejects the null that the distributions are the same: $D = 0.406, p \ll 0.001$. When using all documents, $D = 0.224, p \ll 0.001$.

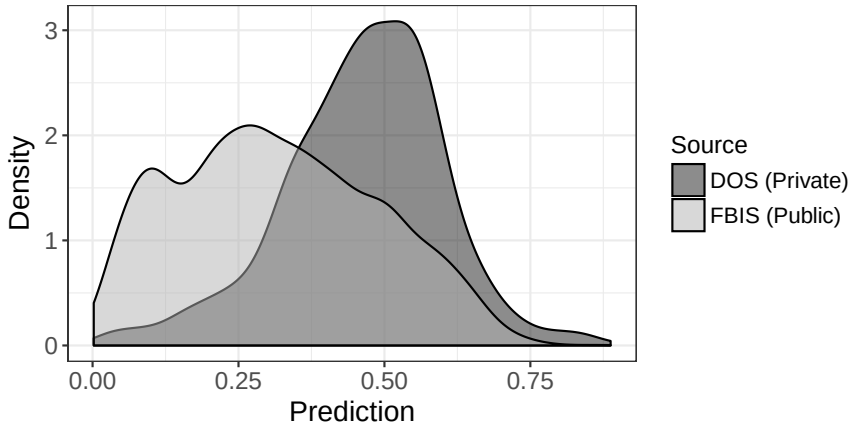


Figure 3: Density plot of predicted probabilities of Soviets' willingness to use force as reflected in public and private signals. Higher values represent greater perceived resolve. Using only high-ranking officials.

The across-signal variances for public and private statements are 0.029 and 0.019, respectively. To ensure this difference is significant, we apply a Fligner-Killeen test for the homogeneity of variances across samples, which is robust to deviations from non-normality. The test strongly rejects the null of homogeneous variances ($\chi^2 = 77.831, p \ll 0.001$).[33] This result is consistent with Hypothesis 2. Since words stated in public address multiple audiences in different ways, public statements tend to provide a less focused overall signal than private ones.

Diplomatic Statements' Small Effects

Due to the high and arguably overwhelming volumes of words that define real-world politics, Hypothesis 1 postulated that neither public nor private statements should have a large impact on policymakers' evaluations of resolve when compared to costly events. Hypothesis 3 went one step further: If Hypothesis 2 was true and public verbal signals were noisier than private ones, as appears to be the case, then private signals may have relatively strong effects in shaping perceptions.

We first test these notions using a series of negative binomial regressions.[34] The primary outcome variable is the number of White House memoranda that are determined to convey perceptions of Soviet resolve. The unit of analysis is the week. This level is chosen to allow for dynamic activity while also overcoming some estimation challenges that arise from the high frequency of zeroes in daily-level data.

[33] Using all statements, variances are 0.038 (FBIS) and 0.033 (DOS). These data also reject the null: $\chi^2 = 102.760, p \ll 0.001$.

[34] The mean is 2.479 and variance is 21.852, which rules out a Poisson model.

Our analysis assumes that temporal co-occurrence or proximity of signals indicates the processing of diplomatic statements and/or events by elites. That is, if a spike in private statements of resolve via DOS co-occurs with an uptick in concerns at the White House, we presume that those private statements helped engender the increase. While we believe this is a reasonable approach, potential refinements are discussed in the Conclusion.[35]

Table 2 displays initial results. All models include three weeks of lags in the dependent variable, as this minimizes AIC. Model 1 uses the entirety of DOS and FBIS data, along with NYT events. We see that costly actions have a strongly positive and statistically significant effect on WH perceptions of Soviet threat. Meanwhile, private statements have a weakly positive effect, and public statements have essentially no effect. Actions have a magnitude that is about eight times larger than a private signal. Put together, these findings corroborate Hypothesis 1 and also speak to Hypothesis 3.

Models 2 through 5 perform the analysis with different combinations of filtered data, which only looks at governmental or high-ranking sources. Model 6 uses statements from high-ranking officials for both DOS and FBIS. The key results not only remain, but the statistical and substantive significance of private signals grows. A private threat from a high-ranking Soviet official has slightly more than half the effect of a costly signal.

[35] Appendix F also provides results using one-week lags of the main explanatory variables. Findings are largely maintained, making a case for Granger causality.

Table 2: Results from negative binomial regressions.

	Dependent variable: White House					
	(1)	(2)	(3)	(4)	(5)	(6)
Private (DOS)						
All cables	0.030*	0.029*	0.028*			
	(0.015)	(0.015)	(0.015)			
High-rank				0.166**	0.160**	0.140**
				(0.069)	(0.069)	(0.069)
Public (FBIS)						
All statements	0.001			−0.001		
	(0.015)			(0.015)		
Governmental		0.016			0.009	
		(0.027)			(0.027)	
High-rank			0.083			0.068
			(0.051)			(0.052)
Actions (NYT)	0.244**	0.238**	0.252**	0.270***	0.264**	0.274***
	(0.105)	(0.108)	(0.100)	(0.105)	(0.107)	(0.099)
Constant	−1.445***	−1.450***	−1.472***	−1.497***	−1.498***	−1.497***
	(0.309)	(0.308)	(0.308)	(0.318)	(0.316)	(0.314)
Lagged DVs	3	3	3	3	3	3
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	304	304	304	304	304	304
Log Likelihood	-509.264	-509.064	-507.430	-508.307	-508.253	-507.168
θ	0.948***(0.150)	0.951***(0.151)	0.982***(0.158)	0.949***(0.149)	0.952***(0.150)	0.975***(0.155)
AIC	1,042.529	1,042.129	1,038.859	1,040.613	1,040.507	1,038.337

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

The PAR(p) Model

Brandt and Williams (2001) argue that most traditional approaches to studying count data, including negative binomial regressions, do not properly account for systematic dynamics, leading to model misspecification and potential inefficiencies (White 1994). They instead propose a Poisson autoregressive model, or PAR(p), to properly analyze dynamic count data. Our main results utilize this technique.

In service of a full analysis, we control for a series of potential confounders. First, we capture federal *elections* by creating a binary variable that takes the value 1 in the two months preceding each presidential and midterm election in November of 1958, 1960, and 1962. Second, we include a running count of *militarized interstate disputes* between the United States and the Soviet Union that are outside the scope of Berlin (Palmer et al. 2015). Third, we have a dummy variable for the *Kennedy administration*, which begins on January 20, 1961.[36]

Table 3 shows the results using four PAR(7) models.[37] Our data are stationary, which allows us to use the variables in their original forms.[38] Models 1 and 2 use all DOS and FBIS data. Both strongly support Hypotheses 1 and 3. Costly events have larger impacts on elite reactions—and thus have greater credibility—than verbal statements, and private statements are relatively more credible than public statements. Models 3 and 4 are limited to high-ranking statements and exhibit the same findings. Much as was the case with negative binomial models, private statements from high-ranking officials are higher in credibility, and their magnitude is roughly half that of costly events. Controls in Models 2 and 4 do not impact the results.[39]

Table 4 provides more intuitive versions of the PAR(p) models' results by determining the short-term and long-term effects of a one-unit increase of a signal on the White House's evaluations of Soviet resolve. That is, we can determine the instantaneous and long-run impacts of one additional DOS (private) or FBIS (public) statement expressing resolve on the number of White House documents expressing perceived hostility.

[36] Appendix E contains results from negative binomial regressions that these control variables. The results do not change.

[37] Seven autoregressive terms minimized AIC.

[38] The data being stationary also makes it highly unlikely that our results are spurious (Granger and Newbold 1974).

[39] Appendix F performs additional checks using different versions of the explanatory variables. These include moving averages, one-week lags, and combined FBIS/NYT measures. Results are generally unchanged.

Table 3: Results from PAR(7) models.

	Dependent variable: White House			
	All DOS/FBIS		High-ranking DOS/FBIS	
	(1)	(2)	(3)	(4)
Private (DOS)	0.040***	0.033***	0.116***	0.092***
	(0.011)	(0.012)	(0.027)	(0.034)
Public (FBIS)	−0.017	−0.011	0.024	0.048
	(0.021)	(0.025)	(0.067)	(0.065)
Actions (NYT)	0.251**	0.243**	0.205***	0.200**
	(0.102)	(0.121)	(0.066)	(0.078)
Election period		−0.196		−0.070
		(0.486)		(0.454)
US-USSR MIDs		0.119		0.142
		(0.105)		(0.095)
Kennedy		0.002		0.005
		(0.223)		(0.205)
ρ_1	0.150***	0.146***	0.146***	0.145***
	(0.036)	(0.036)	(0.037)	(0.036)
ρ_2	0.140***	0.136***	0.133***	0.131***
	(0.035)	(0.035)	(0.035)	(0.034)
ρ_3	0.121***	0.118***	0.117***	0.116***
	(0.033)	(0.033)	(0.033)	(0.033)
ρ_4	0.046	0.047	0.049	0.049
	(0.033)	(0.032)	(0.032)	(0.031)
ρ_5	0.050	0.052	0.052	0.053*
	(0.032)	(0.032)	(0.031)	(0.031)
ρ_6	0.080**	0.081**	0.081**	0.082***
	(0.032)	(0.031)	(0.031)	(0.031)
ρ_7	0.033	0.036	0.035	0.037
	(0.031)	(0.031)	(0.031)	(0.030)
Intercept	0.215	0.002	0.246	−0.056
	(0.192)	(0.346)	(0.194)	(0.349)
Observations	300	300	300	300
Log-likelihood	−504.531	−503.764	−505.213	−504.359
AIC	1029.061	1033.528	1030.427	1034.718

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

		All, no controls	All, controls	High, no controls	High, controls
Short-Term	DOS	0.025 (0.990%)	0.015 (0.619%)	0.081 (3.267%)	0.052 (2.090%)
	FBIS	−0.010 (−0.417%)	−0.005 (−0.212%)	0.017 (0.684%)	0.027 (1.089%)
	NYT	0.155 (6.263%)	0.113 (4.558%)	0.144 (5.790%)	0.111 (4.497%)
Long-Term	DOS	0.065 (2.609%)	0.040 (1.612%)	0.209 (8.433%)	0.134 (5.393%)
	FBIS	−0.027 (−1.098%)	−0.014 (−0.553%)	0.044 (1.766%)	0.070 (2.810%)
	NYT	0.409 (16.495%)	0.294 (11.871%)	0.371 (14.948%)	0.288 (11.607%)

Table 4: Short-term and long-term effects on the White House variable. Percentage changes from the overall mean are in parentheses.

The effects of FBIS signals are so imprecise and small that the estimate is often negative. However, private signals as a whole generate changes ranging from a 0.619% to 2.609% increase from the mean number of White House documents, which is 2.479. The range increases to 2.090% to 8.433% when using only private statements from high-ranking officials. In comparison, costly and hostile events have a markedly larger effect on White House documents, deviating from the mean by anywhere between 4.558% to 16.495%. In an "ideal" setting, one's prior belief may be that a single threatening statement from private channels should result in approximately one subsequent White House document conveying this message.[40] The results presented here indicate a highly inefficient process borne out of a more realistic understanding of the vast and cacophonous information environment in which diplomacy takes place.

Overall, this analysis supports Hypothesis 3, which predicts that private statements should have a larger impact on elites' evaluations than public statements. Hypothesis 1, which postulates that both forms of diplomatic signal should have smaller effects than costly and non-verbal events, also funds support. These results provide the first systematic evidence of a hierarchy in signals with respect to shaping evaluations of an adversary's intentions: costly events on top, private diplomatic signals in the middle, and public diplomatic messages on the bottom. Such a ranking belies the implications of the canonical costly signaling perspective.

The Core of the Crisis

Crisis scholars may object to the notion of the Berlin Crisis lasting five years. A crisis, particularly as envisioned in game-theoretic terms, is a more distinct event defined by an initial challenge and then a sequence of interactions to address it (Snyder and Diesing 1977). The information

[40] A number greater than 1 would reflect a multiplicative effect and growth in concerns.

environment in immensely concentrated moments of tension may, in theory, be starker and set a better stage for public hand-tying. As such, the analysis done thus far may not be an honest reflection of dynamics during a "crisis" as understood by formal models.

To address this concern, we examine a subset of the five-year range most strongly associated with the Berlin Crisis: June 4, 1961 to November 9, 1961. This five-month period is book-ended by the calamitous Vienna summit, where Khrushchev made his second ultimatum, and a Soviet proposal for a compromise solution on Berlin (Leng 2000).[41] In between these two events, the Berlin Wall emerged, and the two sides' tanks faced off at Checkpoint Charlie. We utilize data from between June 1 and November 15, 1961 to make our assessments.

Figure 4 illustrates overall distributions of observed resolve across time periods and sources.[42] Table 5 shows that levels of perceived hostility indeed become higher during the main crisis for both public and private statements, though this is not statistically significant for DOS. Private statements reflect higher perceived hostility than public statements throughout. Table 6 includes results for four Fligner-Killeen tests of homogeneity of variances and indicates that public statements have more noise than private statements, both in and out of the key crisis. Variation in public signals is also mildly higher during the crisis. In times of serious tension, senders may try to direct more threatening public statements toward their adversary, but may not change (or may even soften) the nature of their public statements directed to other audiences, thus widening the spectrum of signals produced. Speculation notwithstanding, our statistical finding casts further doubt on crisis bargaining scholarship's assumption that public signals should be especially direct and forceful during crisis in order to effectively relay credible threats. Hypothesis 2 remains valid regardless of whether we focus only on the peak crisis or not.

This 160-day period only produces 22 or 23 weekly observations, so we cannot perform a useful statistical analysis. But the results provided here indicate that even though the intensity of diplomatic statements increases during extraordinary moments of tension, private communications continue to be a more precise source of information to understand an adversary's intentions.

[41] For more details on this proposal, see "Soviet Modifies Berlin Proposal; U.S. Unimpressed" on the front page of the *New York Times* on November 10, 1961. While the plan received a tepid response, it signified a pacific shift in the Soviet approach to the Berlin problem.

[42] Again, note that this analysis uses DOS and FBIS measures based on high-ranking officials.

Importantly, the time between June and November 1961 represents a "perfect" scenario in which public declarations should, in theory, generate the greater strategic and political traction.

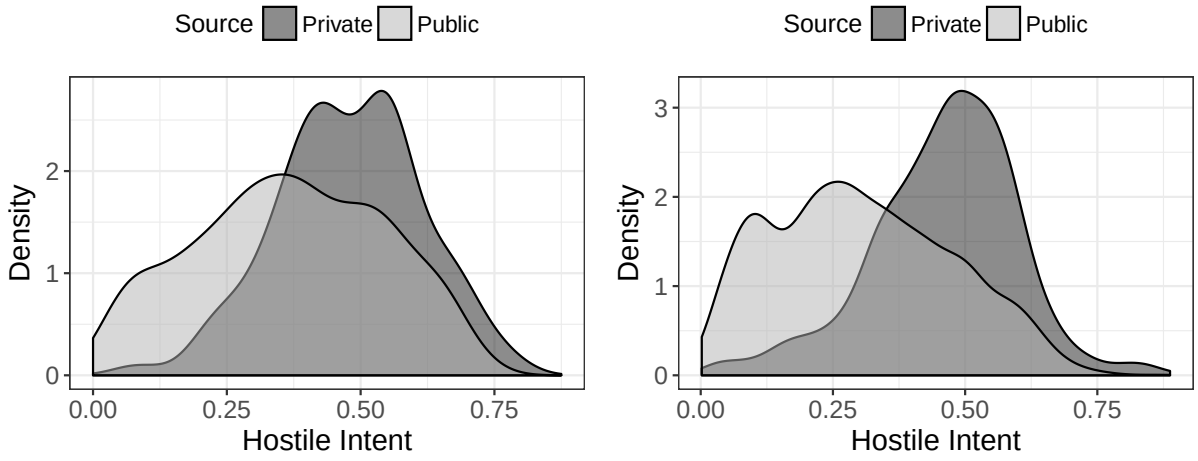
Conclusion

More than five decades ago, Thomas Schelling established a remarkably cogent framework for understanding the diplomacy of conflict behavior. The notions of credible commitment and rationality have left an indelible mark on the study of crisis bargaining, and have led scholars to develop a systematic understanding of interstate interactions. In the last two decades, audience cost theory has become the primary prism through which scholars debate the effectiveness of public and private diplomatic signals in influencing perceptions. The predominant belief remains that public hand-tying is a costly act that conveys far greater commitment than a seemingly costless message relayed behind closed doors.

This logic is intuitive and compelling. But without much systematic empirical data, these laudable effects have become increasingly abstract and swept away a more thoughtful examination of the actual information environment in which crisis diplomacy occurs. The tremendous volume of dissonant information that passes through a government, involving a constantly shifting array of priorities, pulls at some threads that hold together many contemporary views of crisis bargaining. Because real-world diplomacy is hectic, the transmission of information is noisy and misperception is inevitable. But critically, noise is not constant across diplomatic channels. Because public statements are meant to be directed at multiple audiences, they are particularly noisy and ineffectual in changing elites' beliefs.

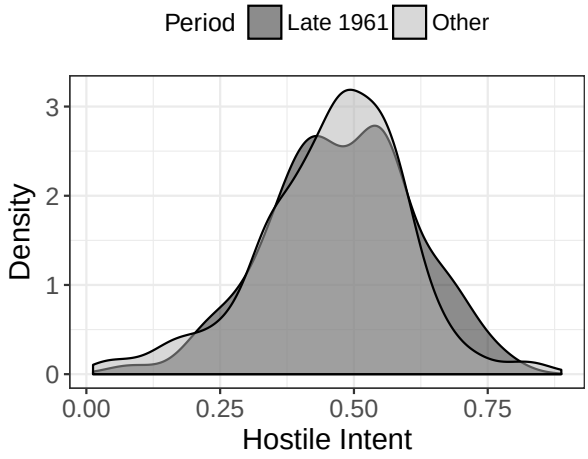
These are not superfluous details or theoretical window dressing. Many extant works on crisis resolution may have overstated the absolute and relative effects of public and private diplomatic statements. By failing to consider the quantity and quality of information that policymakers confront, scholars have either argued that only public statements are effective, or that private statements can sometimes be effective. Two additional options are omitted: that neither signal has a substantial effect, and that private statements may be more effective than public ones.

In this paper, we have used a combination of archival, statistical learning, and time series methods to evaluate these claims. The approach is new for crisis bargaining and permits one of the

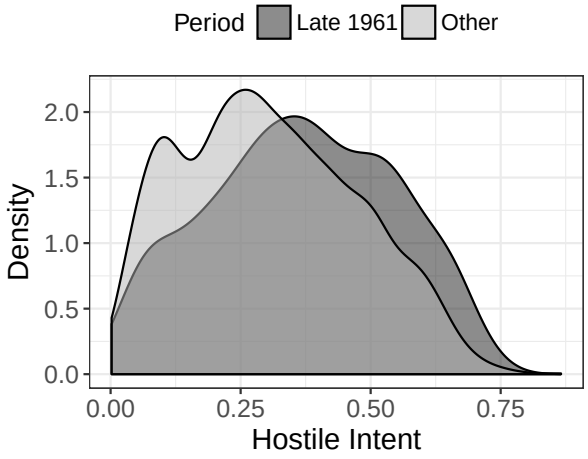


(a) Late 1961 (Peak of crisis)

(b) Outside peak of crisis



(c) Private signals



(d) Public signals

Figure 4: Distributions of observed Soviet resolve via diplomatic signals. Using high-ranking officials only.

	Non-Crisis	**Crisis**	t-test	KS test
DOS	0.460	0.478	$p = 0.243$	$p = 0.457$
FBIS	0.306	0.367	$p \ll 0.001$	$p \ll 0.001$
t-test	$p \ll 0.001$	$p \ll 0.001$		
KS test	$p \ll 0.001$	$p \ll 0.001$		

Table 5: Mean levels of observed Soviet resolve, by signal source and time period. Results of t-tests and Kolmogorov-Smirnov two-sample tests are presented for each row and column. Using high-ranking officials only.

	Non-Crisis	**Crisis**	FL test
DOS	0.019	0.018	$p = 0.639$
FBIS	0.028	0.031	$p = 0.073$
FL test	$p \ll 0.001$	$p = 0.005$	

Table 6: Variances in observed Soviet resolve across signals, by signal source and time period. Results of Fligner-Killeen tests are presented for each row and column. Using high-ranking officials only.

first quantitative analyses of the effect of public and private diplomacy on evaluations of resolve. Critically, we study the Berlin Crisis of 1958 to 1963—a period of immense danger involving a clear focal point and the possibility of nuclear war. The Berlin Crisis should be a textbook case of crisis bargaining that represents an ideal set of conditions for public and private communications to shape American elites' perceptions of the Soviet Union.[43] Even in this best case scenario, we find that either form of diplomatic signal has a large effect on the White House, that public statements are noisier than private statements, and that private signals are generally more efficacious in altering perceptions.

These findings do not mean that public signals are universally ineffective. As many anecdotes point out, there are clear instances where categorically hostile threats made in public should hold greater weight than an analogous statement made in secret. Nonetheless, such instances are rare and must be undeniably obvious to break through the noise and be understood in the moment. Our contention, backed by new data, is that such crystal-clear scenarios are not the norm. Concerns about Soviet resolve did not only spike in response to smoking gun events, but constantly and uneasily fluctuated based on everyday diplomatic activity.

This study, the new text-based data, and the general framework we have outlined set a foundation for further research on several important aspects of diplomacy. We mention two here.

The temporal sequencing of public statements, private statements, and costly events could help illuminate the manner in which elites send, manipulate, and clarify information. For example, if a private signal is followed by a growth in public statements, this suggests a dynamic of escalation where private communication failed to stem an issue, pushing the disagreement into the public spotlight. Conversely, if public statements are followed by private statements, it may be that elites use private communications to highlight which public messages are important and directed at the

[43] Indeed, concerns about Cold War tensions escalating to nuclear hostilities motivated the work of Schelling and his contemporaries.

adversary. If no temporal relationship exists, public and private messages may have fundamentally different information or goals. Any of these three scenarios would be revealing and encourage scholars to more seriously consider the calculus of diplomatic communications (Trager 2017).

A key contention in this paper is that elites are literally incapable of processing and acting upon every piece of information running across their desks. We have provided evidence that a consequence of this information overload—attenuated levels of signal processing and increased misperception—indeed exist, but we do not speak to when and why actors shift their focus to a specific topic of concern, or what consequences this has for beliefs and policymaking.[44] Future studies could adopt a document-based approach to study this dynamic. By collecting a wider array of archived government documents, scholars could speak directly to the causes and effects of information processing and agenda-setting on foreign policy.

Tensions concerning North Korea, the South China Sea, and Syria, among other locales, continue to make crisis diplomacy relevant today. On one hand, our findings are discouraging for the study of contemporary conflicts, since we cannot fully observed private diplomatic statements exchanged in current affairs. On the other hand, the results also suggest that we should temper our reactions to various provocative statements that parties make in public. Regardless of the implications to scholars' abilities to study current-day issues, or to predominant theories of diplomacy, our theoretical understanding of information and empirical contribution of document-based data establish a more rigorous and pragmatic approach to learning when, why, and how crises unfold.

[44] Jones and Baumgartner (2005) and Yarhi-Milo (2014) speak to this broad concern.

References

Azar, Edward E. 1982. "Codebook of the Conflict and Peace Data Bank (COPDAB)." Center for International Development, University of Maryland.

Barker, Elisabeth. 1963. "The Berlin Crisis 1958-1962." *International Affairs* 39(1): 59–73.

Barston, R. P. 1988. *Modern Diplomacy*. London: Longman.

Blechman, Barry M. and Douglas M. Hart. 1999. "Nuclear Weapons and the 1973 Middle East Crisis." In *The Use of Force: Military Power and International Politics*, eds. Robert J. Art and Kenneth N. Waltz. Lanham, MD: Rowman & Littlefield.

Brandt, Patrick T. and John T. Williams. 2001. "A Linear Poisson Autoregressive Model: The Poisson AR(p) Model." *Political Analysis* 9(2): 164–184.

Breiman, Leo. 2001. "Random Forest." *Machine Learning* 45(1): 5–32.

Brzezinski, Zbigniew. 1983. *Power and Principle: Memoirs of the National Security Adviser, 1977-1981*. New York: Farrar, Straus, Giroux.

Burr, William. 1994. "Avoiding the Slippery Slope: The Eisenhower Administration and the Berlin Crisis, November 1958-1959." *Diplomatic History* 18(2): 177–205.

Carmichael, Neil. 2011. "A Brief History of the Berlin Crisis of 1961." From National Declassification Center at the National Records and Archives Administration.

Chen, Chao, Andy Liaw, and Leo Breiman. 2004. "Using Random Forest to Learn Imbalanced Data." Technical report, University of California at Berkeley. `http://statistics.berkeley.edu/sites/default/files/tech-reports/666.pdf`.

Crawford, Vincent P. and Joel Sobel. 1982. "Strategic Information Transmission." *Econometrica* 50(6): 1431–1451.

Dahl, Erik J. 2013. *Intelligence and Surprise Attack: Failure and Success from Pearl Harbor to 9/11 and Beyond*. Washington, DC: Georgetown University Press.

Downes, Alexander B. and Todd S. Sechser. 2012. "The Illusion of Democratic Credibility." *International Organization* 66(3): 457–489.

Duelfer, Charles A. and Stephen B. Dyson. 2011. "Chronic Misperception and International Conflict." *International Security* 36(1): 73–100.

Farrell, Joseph and Robert Gibbons. 1989. "Cheap Talk with Two Audiences." *The American Economic Review* 79(5): 1214–1223.

Fearon, James D. 1994. "Domestic Political Audience Costs and the Escalation of International Disputes." *American Political Science Review* 88(3): 577–592.

Fearon, James D. 1997. "Signaling Foreign Policy Interests: Tying Hands Versus Sunk Costs." *Journal of Conflict Resolution* 41(1): 68–90.

Fey, Mark and Kristopher W. Ramsay. 2007. "Mutual Optimism and War." *American Journal of Political Science* 51(4): 738–754.

Finel, Bernard I. and Kristin M. Lord. 1999. "The Surprising Logic of Transparency." *International Studies Quarterly* 43(2): 315–339.

Fitzgerald, Michael R. and Allen Packwood. 2013. *Out of the Cold: The Cold War and Its Legacy.* New York: Bloomsbury.

Friedman, Jerome H., Robert Tibshirani, and Trevor Hastie. 2009. *The Elements of Statistical Learning: Data Mining, Inference, and Prediction.* New York: Springer.

Fuhrmann, Matthew and Todd S. Sechser. 2014. "Signaling Alliance Commitments: Hand-Tying and Sunk Costs in Extended Nuclear Deterrence." *American Journal of Political Science* 58(4): 919–935.

Granger, Clive W. J. and Paul Newbold. 1974. "Spurious Regressions in Econometrics." *Journal of Econometrics* 2(1): 111–120.

Guisinger, Alexandra and Alastair Smith. 2002. "Honest Threats: The Interaction of Reputation and Political Institutions in International Crises." *Journal of Conflict Resolution* 46(2): 175–200.

Handel, Michael I. 1977. "The Yom Kippur War and the Inevitability of Surprise." *International Studies Quarterly* 21(3): 461–502.

Harrison, Hope M. 2011. *Driving the Soviets Up the Wall*. Princeton: Princeton University Press.

Holsti, Ole R., Richard A. Brody, and Robert C. North. 1964. "Measuring Affect and Action in International Reaction Models: Empirical Materials from the 1962 Cuban Crisis." *Journal of Peace Research* 1(3/4): 170–190.

Jervis, Robert. 1976. *Perception and Misperception in International Politics*. Princeton: Princeton University Press.

Johns, Leslie. 2006. "Knowing the Unknown: Executive Evaluation and International Crisis Outcomes." *Journal of Conflict Resolution* 50(2): 228–252.

Jones, Bryan D. and Frank R. Baumgartner. 2005. *The Politics of Attention: How Government Prioritizes Problems*. Chicago: University of Chicago Press.

Jönsson, Christer. 1996. "Diplomatic Signaling in the Television Age." *Press/Politics* 1(3): 24–40.

Kempe, Frederick. 2011. *Berlin 1961: Kennedy, Khrushchev, and the Most Dangerous Place on Earth*. New York: Penguin Group.

Kertzer, Joshua D. 2016. *Resolve in International Politics*. Princeton: Princeton University Press.

Kissinger, Henry A. 1979. *White House Years*. Boston, MA: Little, Brown.

Kissinger, Henry A. 1982. *Years of Upheaval*. Boston, MA: Little, Brown.

Kurizaki, Shuhei. 2007. "Efficient Secrecy: Public versus Private Threats in Crisis Diplomacy." *American Political Science Review* 101(3): 543–558.

Kurizaki, Shuhei. 2016. "Signaling and perception in international crises: Two approaches." *Journal of Theoretical Politics* 28(4): 625–654.

Lake, David A. 2010/11. "Two Cheers for Bargaining Theory: Assessing Rationalist Explanations of the Iraq War." *International Security* 35(3): 7–52.

Lebow, Richard N. 1981. *Between Peace and War.* Baltimore, MD: Johns Hopkins Press.

Lebow, Richard N. 2001. "Deterrence and Reassurance: Lessons from the Cold War." *Global Dialogue* 3(4): 119–132.

Lebow, Richard N. and Janice G. Stein. 1994. *We All Lost the Cold War.* Princeton: Princeton University Press.

Leetaru, Kalev. 2010. "The Scope of FBIS and BBC Open-Source Media Coverage, 1979-2008." *Studies in Intelligence* 54(1): 17–37.

Leng, Russell J. 2000. *Bargaining and Learning in Recurring Crises: The Soviet-American, Egyptian-Israeli and Indo-Pakistani Rivalries.* Ann Arbor, MI: University of Michigan Press.

Leventoğlu, Bahar and Ahmer Tarar. 2005. "Prenegotiation Public Commitment in Domestic and International Bargaining." *American Political Science Review* 99(3): 419–433.

Levy, Jack S. 1983. *War in the Modern Great Power System, 1495-1975.* Lexington, KY: University Press of Kentucky.

Levy, Jack S., Michael K. McKoy, Paul Poast, and Geoffrey P.R. Wallace. 2015. "Backing Out of Backing In? Commitment and Consistency in Audience Costs Theory." *American Journal of Political Science* 59(4): 988–1001.

Meirowitz, Adam and Anne E. Sartori. 2008. "Strategic Uncertainty as a Cause of War." *Quarterly Journal of Political Science* 3(4): 327–352.

Mercer, Jonathan. 1996. *Reputation and International Politics.* Ithaca, NY: Cornell University Press.

Mitchell, Christopher. 2000. *Gestures of Conciliation: Factors Contributing to Successful Olive Branches.* New York: St. Martin's Press.

Newman, Kitty. 2007. *Macmillan, Khrushchev and the Berlin Crisis, 1958-1960.* New York: Routledge.

Office of the Historian. 1992. *Foreign Relations of the United States, 1955-1957, Volume XXVI: Central and Southeastern Europe.* Washington, DC: United States Government Publishing Office.

Palmer, Glenn, Vito D'Orazio, Michael Kenwick, and Matthew Lane. 2015. "The MID4 dataset, 2002-2010: Procedures, coding rules and description." *Conflict Management and Peace Science* 32(2): 222–242.

Perlmutter, Amos. 1975. "Crisis Management: Kissinger's Middle East Negotiations." *International Studies Quarterly* 19(3): 316–343.

Quek, Kai. 2016. "Are Costly Signals More Credible? Evidence of Sender-Receiver Gaps." *Journal of Politics* 78(3): 925–940.

Ramsay, Kristopher W. 2011. "Cheap Talk Diplomacy, Voluntary Negotiations, and Variable Bargaining Power." *International Studies Quarterly* 55(4): 1003–1023.

Roop, Joseph E. 1969. *Foreign Broadcast Information Service, History, Part I: 1941-1947.* Washington, DC: Central Intelligence Agency.

Russell, Richard. 2000. "American Diplomatic Realism: A Tradition Practised and Preached by George F. Kennan." *Diplomacy & Statecraft* 11(3): 159–182.

Sagan, Scott D. 1985. "Nuclear Alerts and Crisis Management." *International Security* 9(4): 99–139.

Sartori, Anne E. 2002. "The Might of the Pen: A Reputational Theory of Communication in International Disputes." *International Organization* 56(1): 121–149.

Sartori, Anne E. 2005. *Deterrence by Diplomacy.* Princeton: Princeton University Press.

Schelling, Thomas. 1960. *The Strategy of Conflict.* Cambridge, MA: Harvard University Press.

Schelling, Thomas C. 1966. *Arms and Influence.* New Haven, CT: Yale University Press.

Schroder, Harold M., Michael J. Driver, and Siegfried Streufert. 1967. *Human Information Processing: Individuals and Groups Functioning in Complex Social Situations.* New York: Holt, Rinehart and Winston.

Schultz, Kenneth A. 2001. *Democracy and Coercive Diplomacy.* Cambridge: Cambridge University Press.

Shapiro, Michael J. and G. Matthew Bonham. 1973. "Cognitive Process and Foreign Policy Decision-Making." *International Studies Quarterly* 17(2): 147–174.

Simon, Herbert A. 1947. *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organization*. New York: Macmillan Company.

Slantchev, Branislav L. 2006. "Politicians, the Media, and Domestic Audience Costs." *International Studies Quarterly* 50(2): 445–477.

Slantchev, Branislav L. 2011. *Military Threats: The Costs of Coercion and the Price of Peace*. Cambridge: Cambridge University Press.

Smith, Alastair. 1998. "International Crises and Domestic Politics." *American Political Science Review* 92(3): 623–638.

Smyser, William R. 2009. *Kennedy and the Berlin Wall*. New York: Rowman & Littlefield.

Snyder, Glenn H. 1972. "Crisis Bargaining." In *International Crises: Insights from Behavioral Research*, ed. Charles F. Hermann. Free Press.

Snyder, Glenn H. and Paul Diesing. 1977. *Conflict Among Nations: Bargaining, Decision Making, and System Structure in International Crises*. Princeton: Princeton University Press.

Snyder, Jack and Erica D. Borghard. 2011. "The Cost of Empty Threats: A Penny, Not a Pound." *American Political Science Review* 105(3): 437–456.

Steury, Donald P. 1996. *Intentions and Capabilities: Estimates on Soviet Strategic Forces, 1950-1983*. Washington, DC: Center for the Study of Intelligence, Central Intelligence Agency.

Tarar, Ahmer and Bahar Leventoğlu. 2012. "Limited Audience Costs in International Disputes." *Journal of Conflict Resolution* 57(6): 1065–1089.

Tomz, Michael R. 2007. "Domestic Audience Costs in International Relations: An Experimental Approach." *International Organization* 61(4): 821–840.

Trachtenberg, Marc. 1999. *A Constructed Peace: The Making of the European Settlement 1945-1963*. Princeton: Princeton University Press.

Trachtenberg, Marc. 2012. "Audience Costs: An Historical Analysis." *Security Studies* 21(1): 3–42.

Trager, Robert F. 2017. *Diplomacy: Communication and the Origins of International Order*. Cambridge: Cambridge University Press.

Trauschweizer, Ingo W. 2006. "Tanks at Checkpoint Charlie: Lucius Clay and the Berlin Crisis, 196162." *Cold War History* 6(2): 205–228.

United States Department of State. 2005. "Department of State Classification Guide (DSCG 05-01)." Declassified document.

Vertzberger, Yaacov Y.I. 1990. *The World in Their Minds: Information Processing, Cognition, and Perception in Foreign Policy Decisionmaking*. Stanford, CA: Stanford University Press.

Wager, Stefan, Trevor Hastie, and Bradley Efron. 2014. "Confidence Intervals for Random Forest: The Jackknife and the Infinitesimal Jackknife." *Journal of Machine Learning Research* 15(1): 1625–1651.

White, Halbert. 1994. *Estimation, Inference and Specification Analysis*. Cambridge: Cambridge University Press.

Wickens, Christopher D. 1992. *Engineering Psychology and Human Performance*. New York: HarpersCollins.

Williamson, Richard D. 2012. *First Steps Toward Detente: American Diplomacy in the Berlin Crisis, 1958-1963*. Lanham, MD: Lexington.

Wohlstetter, Roberta. 1962. *Pearl Harbor: Warning and Decision*. Stanford, CA: Stanford University Press.

Yarhi-Milo, Keren. 2013. "Tying Hands Behind Closed Doors: The Logic and Practice of Secret Reassurance." *Security Studies* 22(3): 405–435.

Yarhi-Milo, Keren. 2014. *Knowing the Adversary: Leaders, Intelligence, and Assessment of Intentions in International Relations*. Princeton: Princeton University Press.

Zubok, Vladislav M. 1993. "Khrushchev and the Berlin Crisis (1958-1962)." Working Paper No. 6, Woodrow Wilson International Center for Scholars.

Online Appendices

for

"The Credibility of Public and Private Signals:

A Document-Based Approach"

Appendix A: Document Sources

Declassified documents from the Department of State and the White House were collected at several separate libraries and archives, spanning the years 1958-1963.

Dwight D. Eisenhower Presidential Library - Abilene, KS

Collection	Series	Box(es)
Papers as President	National Security Council	5, 7, 10-13
(Ann Whitman File)	Diary	37-45, 49, 51
	Administration	7
	ACW Diary	10-11
	Cabinet	14
	Dulles-Herter	9-12
	International	15-16, 24-25, 44, 50, 51-52
	International Meetings	4
Eleanor L. Dulles	[Germany & Berlin, 1957-1959]	13, 31, 36
John F. Dulles	Chronological	17
	Gerard C. Smith	1-3
Christian Herter	[Chronological File, 1958-1959]	6-7
	[US Policy Toward Germany]	8
Lauris Norstad	[Germany & Berlin, 1956-1962]	24, 48-49, 61, 64, 72, 86, 88, 97, 103, 105, 112-113
White House Office, NSC	Executive Secretary's Subject File	7-11
White House Office,	International	5-6
Office of the Staff Secretary	Subject, State Department Subseries	3-4

John F. Kennedy Presidential Library - Boston, MA

Collection	Series	Boxes
National Security Files	The Berlin Problem	81-98
	National Security Action Memoranda	11, 36, 41, 58-59, 62, 70, 78, 82, 93, 109, 116, 128, 158, 328-342

National Archives II - College Park, MD

Collection	Series	Boxes
Department of State Records	Central Files (RG 59)	1887-1889, 1902-1910, 3531-3535, January-December 1963

Appendix B: Example Predictions

Below, we present several segments from our data. Their dates, predicted probabilities of signal conveying resolve (for DOS cables and FBIS) and predicted probability that policymakers perceived or made an inference about Soviet resolve (for White House documents) based on the balanced random forest model are provided.

State Department Cables

December 16, 1963
Predicted probability: 0.887

> SECRET
> DEPARTMENT OF STATE
> Memorandum of Conversation
> DATE: Dec. 16 1963
> SUBJECT: Alleged Military Incident in Berlin
> PARTICIPANTS: Ambassador Anatoliy F. Dobrynin USSR
> Llewellyn E. Thompson Ambassador-at-Large Department of State
>
> The Soviet Ambassador told me he had been instructed to inform the United States Government through me of the following in confidence. The Ambassador made clear that the Soviet Government had no intention of publishing this oral statement.
>
> "In the night of December tenth U.S. military personnel in West Berlin undertook on the Friedrichstrasse border checkpoint clearly provocative actions with regard to border guards of the German Democratic Republic. They threw stones and bottles at them reloaded their rifles and aimed them at the guards and one U. S. corporal crossed the borderline and laid hold of his pistol.
>
> "Serious consequences were avoided only because of the self-control and caution displayed by the G.D.R. border guards. A legitimate question arises as to what this dangerous act of U.S. military personnel could lead to if the G.D.R. border guards wanted to give those responsible for it a good lesson and a kind of rebuff they deserved.
>
> "It is not difficult to see that in this case the incident could escalate to a direct collision between armed men with all the ensuing consequences. And of serious concern is the fact that cases of clearly provocative behavior on the part of U.S. military personnel on the border between West Berlin..."

September 14, 1962
Predicted probability: 0.709

> INCOMING TELEGRAM
> SECRET
> Department of State
> FROM: MOSCOW
> TO: Secretary of State
> NO: 672, SEPTEMBER 14, 1 PM
>
> German Ambassador Kroll, after lengthy friendly conversation with Khrushchev, is convinced that latter plans to proceed with peace treaty shortly after US elections. Khrushchev said that he had been able to delay action since the really important difficulty, i.e. flow of refugees, was solved by the wall. He therefore prepared hold off until November. Meantime, he said, Soviets will begin to prepare public opinion for signature peace treaty, all details of which have been fully prepared. Terms of the peace treaty will make continuation of Western occupation Berlin quite impossible. Should Western powers undertake some action which leads to risk of war, Soviets will go to UN Security Council. Khrushchev said he fully informed on West's contingency planning. But Khrushchev reiterated that Western public opinion and Western leaders so anxious to avoid war they will find some way to live with situation.

August 6, 1958
Predicted probability: 0.492

> INCOMING TELEGRAM
> Recd : AUGUST 6, 1958
> FROM : BERLIN
> TO : Secretary of State
> AUGUST 6, 3 PM. SENT PRIORITY BONN HQ
> REPEATED INFORMATION DEPARTMENT 116 BONN PASS INFO PRITY
> USAREUR 28 REFERENCE EMBTEL 69 TO BERLIN , DEPT 326 USAREUR 82.
>
> Following sent by General Zakharov August to General Rome in reply message same day from British Commandant protesting August enforcement new type truck-convoy Autobahn documentations
>
> Begin text: With reference to your telephone message of the 5th August 1958, I have the honor to remind you that the question of the transport of freight on the Berlin-Marienborn Autobahn was raised in March month of this year on the level of our political advisers. Nevertheless, as you will recall this question was transferred, not at our instigation, to be settled by the commanders-in-chief, who indeed came to an agreement with regard to the introduction, on the 1st August 1958, of the control procedure. Therefore I can not accept your protest and regret that the responsible British military authorities were not sufficiently prepared for the new procedure, but I, as you will appreciate yourself, have not the right to change anything in the procedures laid down by the commanders-in-chief. End text.

> Using simplified provisional version in English. British sent two convoys August 5 Berlin-Helmstedt. No delays encountered at checkpoints following showing ID card of convey commander plus provisional document. NAAFI truck, with similar document traveling Helmstedt to Berlin was delayed.

February 20, 1962
Predicted probability: 0.136

> "...said he was familiar with Mr. Ulbricht's statements and did not think any of them justified. Conclusion I had drawn. Gromyko said that if we were not prepared to respect GDR sovereignty then outlook was very gloomy. He made no reference to timing of continuation our talks nor in any way indicated desire to bring matters to a head. On contrary his concern appeared to be how we could keep talks going in view of current impasse. Thompson ELP."

Foreign Broadcast Information Service

July 19, 1958
Predicted probability: 0.728

> GDR Delegates' Statement
>
> Berlin, ADN, in German Hellschreiber to East Germany, July 19, 1958, 0757 GMT–L
>
> (Text) Stockholm–The German Peace Council and the GDR delegation issued a statement on July 18 on the American-British aggression in the Near East. It sharply condemns the imperialist invasion, especially the aid extended by the West German Adenauer government. These events unmasked the true character of NATO and showed what it meant to be an ally of aggressors. Overnight West Germany was cooperating in an attack. The statement asks what is to become of West Germany if she remained the assembly point and springboard for wars of aggression.
>
> The delegation called on the citizens of the GDR to demand the immediate cessation of the assistance extended by Bonn to the aggressors and the immediate withdrawal of the interventionist troops from the Lebanon and Jordan. This also implied the immediate liquidation of U.S. military bases in the Federal Republic. The situation was revealing once more which of the two German states was a state of peace.
>
> The statement was signed by the head of the delegation and president of the German Peace Council and by leading members of the Peace Council.

March 17, 1959
Predicted probability: 0.880

> U.S. People's Will Disregarded
>
> Moscow, Soviet North American Service in English, Mar. 17, 1959, 0310 GMT–L
>
> (Nikolai Andreyev commentary)
>
> (Text) Statements by responsible officials of the Pentagon at the sittings of the Senate preparedness subcommittee were made public the other day. These statements cannot but cause grave concern. It is not because of the horrors that the Pentagon leaders threaten are in store for the USSR that I want to call your attention to those statements. It is because the political and military course outlined by these generals is fraught with imminent danger for all peoples, Soviet and U.S. alike, and for all mankind.
>
> What does the U.S. military advocate? The keynote of the utterances of General Taylor Chief of Staff of the Army and of General White Chief of Staff of the Air Force is total nuclear war over Berlin. Just imagine: total nuclear war. Not long ago, Walter Lippmann remarked in the New York HERALD TRIBUNE that the intention to resort of force merely to prevent the East Germans from checking papers of the Ailied personnel on the road to West Berlin could start a war on an idiotic issue. It seems to me that some Pentagon leaders want to start a nuclear war on this idiotic issue.
>
> One could laugh at the bravado of those gentlemen if it were not for the fact that they are high-ranking commanders speaking at official hearings in Congress and not to their youngsters at the dinner table. The public is allowed to read only the censored version of the Senate hearings, but even so one finds enough to question the mental soundness of

those who made these statements. General White. for instance. in his global strategic deliberations. doomed whole nations of Europe offhand. dismissing the very real danger of...

October 7, 1959
Predicted probability: 0.071

GUINEA DELEGATION–A Guinea Government delegation arrived at Berlin Schoenefeld airport Oct. 7 to attend the GDR anniversary celebrations. The delegation consisting of Fode Papaou Toure, president of the Guinea Court of Appeal, Ahmascu Thiam, National Assembly deputy, and Camara, Rational Assembly deputy and general secretary of the foreign trade office, was welcomed at the airport by Sepp Schwab, deputy minister for foreign affairs, Carl Eckloff, deputy minister of foreign and intra-German trade, and Manfred Flegel, member of the Presidium of the National Council of the National Front. A guard of honor of the National People's Army was drawn up at the airport. (Berlin, ADN, German, Oct. 7, 1959, 2004 GMT–L)

May 5, 1960
Predicted probability: 0.404

KHRUSHCHEV SPEECH EXPOSES US POLICY

Berlin, Deutschlandsender in German to East and Wsst Germany, May 5, 1960, 2307 GMT–L

(Albert Reiss commentary on Khrushchev Supreme Soviet Speech)

(Excerpts) I should like to challenge everyone to give the name of a single capitalist country where the premier submits such proposals to parliament. Is there a single capitalist country which is contemplating removing the burden of taxation from the shoulders of the workers or exempting the small Industrial producers from the pressure of taxes? Certainly not. Taxes are the panacea of the finance ministers in the capitalist countries. Whenever a hole arises in the state budget it is plugged by taxes, primarily from the packets of the little men. The human tragedies caused by this are not considered important. In the Soviet Union and in all other socialist countries, the aim Is the welfare of the workers.

If people can breathe more freely today than they could 8, 9, or 10 years ago, this is due to the initiatives of the Soviet Union. The path to an understanding and coexistence is, however, obviously not an easy one. We experience relapses into the cold war on the part of the Western powers. Today, 11 days before the summit conference in Paris, Khrushchev had to comment once more on a series of extremely grave manifestations because they are calculated to place in jeopardy an understanding and the success cf the summit conference. We learned from Khrushchev today that U.S. aircraft have flown over the Soviet Union twice very recently, the first time on Apr. 9 and the second time on May 1. The aircraft which violated the frontier of the Soviet Union on May 1 was shot down. Apart from these open provocations on the eve of the summit conference, which is to...

April 20, 1963
Predicted probability: 0.568

GREEN FLIGHT ACCENTS AIR CONTROL NEEDS

East Berlin ADM in German to East Germany 1244 GMT 20 April 1963–L

(Text) Berlin–"Those political circles which by provocation are endangering traffic to and from West Berlin and thereby want to create tension must be aware that they will have to bear full responsibility for all consequences arising from such disruptive actions," writes AUSSENPOLITISCHE KORRESPONDEZ, published by the press department of the GDR Foreign Ministry, By proper (ordnungsgemaesse) transit arrangements, an effective stand could be made against the forces interested in a disturbance of peaceful West Berlin traffic. "Arrangements on this transit traffic, based on international law, are indispensable since this traffic is now taking place, for all practical purposes, without legal basis," says the article referring to air traffic to and from West Berlin which flies over GDR territory.

"If, as was the case in the very recent past, U.S. aircraft were to carry out circuit flights to West Berlin, and if a British private aircraft arbitrarily were to use GDR air corridors for a flight to West Berlin, such acts could only be regarded as an attempt to compromise (belasten) the recently resumed Soviet-U.S. talks about a peaceful solution of the West Berlin question. Every Western provocation in GDR air corridors only proves once again how urgent it is to create proper arrangements about the traffic to West Berlin."

AUSSENPOLITISCHE KORRESPONDEZ points out that the latest provocations are even in contradiction to those (former?) arrangements of the early postwar years, which the Western powers would like to invoke. Thus, a document, drafted in 1946 by the air force directorate of the former Allied Control Council, expressly forebade "reckless flights."

White House Documents

July 19, 1962
Predicted probability: 0.678

> 7/19/62
>
> MEMORANDUM 19-Jul 1962
> SUBJECT : Soviet Intentions on Berlin
>
> At Mr. Kohler's request, we have prepared an updated appraisal of Soviet intentions on Berlin taking account of your conversation with Dobrynin on July 12, the TASS statement of the same date, Khrushchev's interview with American newspapermen on July 13, and the Soviet note of July 14. We do not deal with the President's July 17 talk with Dobrynin. Although Moscow does not appear to have made either a final assessment of the probable outcome of the present bilateral talks or a decision on its own future course of action we believe that the Soviet Union intends to continue the talks for the time being. However, continuation of the Berlin crisis imposes a strain on the Soviet Union and Moscow appears to be considering as a possible alternative some form of scaled-down peace treaty i.e. one that could be delayed or that could be carried out in installments. Moscow will apparently use the current talks (1) to explore the possibility of a negotiated agreement (2) to obtain a clear estimate of the risks involved in implementing various forms of a separate peace treaty and (3) to prepare a favorable record for public use in case it decides to go ahead with a separate peace treaty. Dobrynin's latest proposal for removing Western contingents within four years is nothing more than an ingenious variant of the proposal which Khrushchev advanced privately to Salinger in May and publicly in his July 10 speech.

December 13, 1961
Predicted probability: 0.452

> 12/13/61
>
> OFFICIAL USE ONLY (MENSHIKOV SPEECH TO NATIONAL PRESS CLUB)
>
> Menshikov's formulations were almost identical with the line taken by Khrushchev in his WFTU speech December 9. In some passages even the wording is the same. In essence the position on Berlin as he outlined it is a return to formulations used by the Soviets in stating their maximum position: a German peace treaty with the West Berlin problem settled on that basis, (Khrushchev had not used that phrase) confirmation and legalization of German borders in accordance with the Potsdam agreement elimination of the occupation status in West Berlin severance of the Berlin-Federal Republic ties and relationship and a regulation of the access question through an agreement with the GDR.... Khrushchev almost made the same statement in his WFTU speech one of the four authoritative Soviet references to this threat in the past several months.

January 29, 1959
Predicted probability: 0.603

> ...mobilize world opinion against the Soviet Union as a violator of agreements, a user of force and a threat to the peace. The situation could be taken to the Security Council and, in the event of veto there, to a special session of the General Assembly; b) Military preparations would be intensified and at this point could include measures which would be observable, as, for example, the evacuation of dependents from West Berlin, and possibly from Germany. 5. The decision to use additional force would be subject to governmental decision in the event that the double barreled effort mentioned above was not successful. (Consideration would be given to the possibility of the stationing of Western allied inspectors in lieu of the withdrawn Soviet inspectors at the check points.) 6. Concurrently with the development of the foregoing program an effort would be made to bring about around the middle of April a foreign Ministers ' meeting with the Soviet Union on the various aspects of the German question. These talks might provide a cover which would facilitate the indefinite postponement or modification by the Soviet Union of their present ultimatum as regards Berlin. (It is assumed that allied agreement would be obtainable along these lines. If not the question of U.S. action would have to be considered in the light of the allied position.)

October 6, 1961
Predicted probability: 0.938

> ...access engaging ground origins of any interference. Extend size and scope as necessary C. Maritime control naval blockade or other world-wide measures, both for reprisal and to add to general pressure on Soviets. Use nuclear weapons starting with one of the following courses of action for continuing through C below if necessary: A. Selective nuclear attacks for the primary purpose of demonstrating the will to use nuclear weapons. B. Selective nuclear attacks to achieve in addition significant tactical advantage such as preservation of the integrity of Allied forces committed or to extend pressure toward the objective. Comment B. Opposing strengths probably will be roughly comparable. Military success locally not Impossible. As political operation, this shows Soviets visibly higher risks of nuclear war. Pace and volatility of extended air action raises risks of rapid escalation. C. Lacking direct relation to Berlin, may lock influence on access decisions and entail political liabilities. Exploits pronounced Allied naval superiority. Delayed impact on nuclear risks. Allies only partially control the timing and scale of nuclear weapons use. Such use might be initiated by the Soviets, at any time after the opening of small-scale hostilities. Allied initiation of limited nuclear action may elicit a reply in kind; it may also prompt unrestrained pre-emptive attack. C. General nuclear war...

July 15, 1963
Predicted probability: 0.174

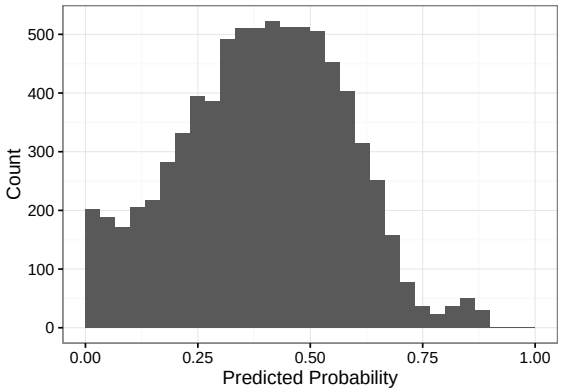
> ...explanation of the press leaks which exposed the confidential deliberations to the public. See Embtel 134 July 11. 8. IAEA AGREEMENT ON PRIVILEGES AND IMMUNITIES It was agreed to discuss on July 15 the Allied reply to the Czech and Hungarian statements on the application to Berlin of the IAEA Agreement on Privileges and Immunities. 9. LEOPOLD-BEKRENDT TALKS Dr. Oncken stated that Leopold and Behrendt met in Berlin on July 8. He informed the Group that the meeting was routine and that there were no political matters discussed between them. Count dAumale asked if the settlement of the swing accounts was discussed. Dr. Oncken replied that the swing was settled on June 30 and that the accounts were almost in perfect balance. 10. SIEMENS FIRM EXPORTS TO BULGARIA Dr. Oncken stated that the Siemens firm in West Berlin informed the Foreign Office that the Bulgarian Ambassador to the Soviet Zone had asked the firm if he could visit the Siemens office in West Berlin to inspect some goods which are to be exported to Bulgaria within terms of the German-Bulgarian trade agreement. The Foreign Office asked Siemens not to receive the Bulgarian Ambassador but to inform him that the Bulgarian trade mission in Frankfurt/Main would be the appropriate office to inspect the goods. 11. LIETZENBURGERSTRASSE PROPERTY IN BERLIN Dr. Oncken raised the matter of the application by the Soviet Embassy in East Berlin for permission to undertake additional construction work at the Soviet property at Lietzenburgerstrasse II in West Berlin. He stated that the Foreign Office has now been informed that the British Commandant has told the Charlottenburg authorities to inform the Soviet Embassy in East Berlin that the first application was not correctly submitted and that a new application should be...

Appendix C: Random Forest Classification Results

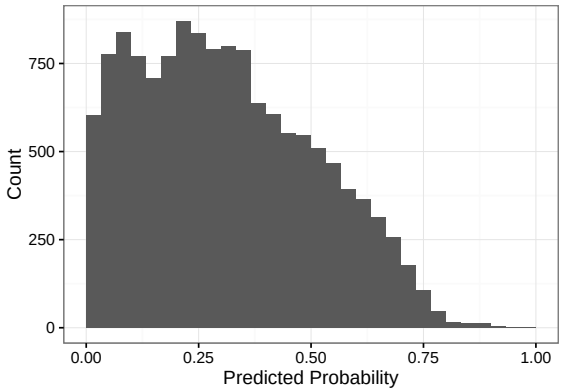
Table A1 provides an array of metrics through which the balanced random forest model used to generate the predicted data can be evaluated. Figure A1 shows distributions of predicted probabilities for all documents.

Metric	**DOS**	**FBIS**	**WH**
F_1	0.864	0.889	0.826
F_2	0.840	0.889	0.795
Kappa	0.490	0.355	0.553
Accuracy	0.800	0.816	0.787
Sensitivity	0.825	0.876	0.776
Specificity	0.717	0.500	0.808
AUC	0.858	0.779	0.859

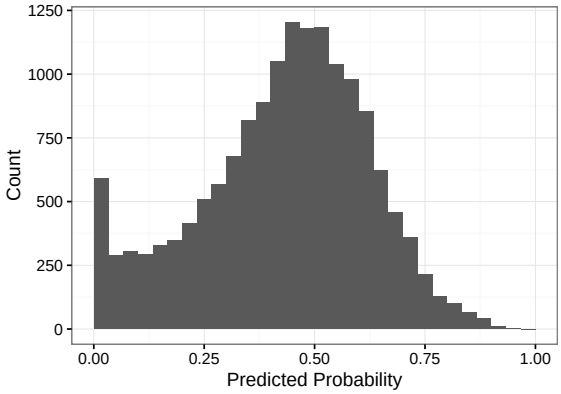
Table A1: Summary of metrics for the balanced random forest model.



(a) Department of State



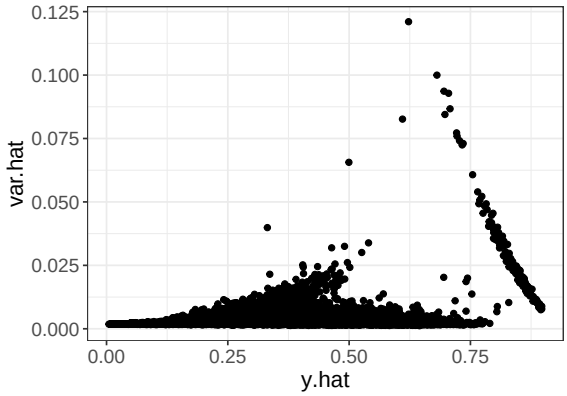
(b) FBIS



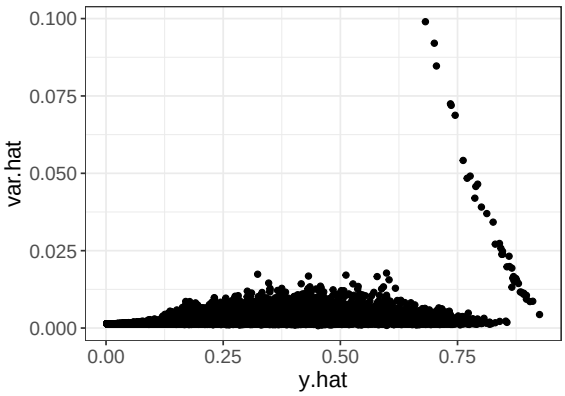
(c) White House

Figure A1: Predicted values.

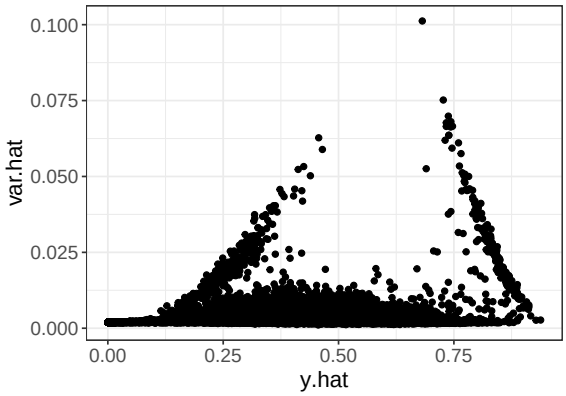
An infinitesimal jackknife bootstrap (Wager et al. 2014) is used to generate confidence intervals for random forest predictions. Figure A2 displays these for the three sets of data.



(a) Department of State



(b) FBIS



(c) White House

Figure A2: Predicted values and associated variances.

Appendix D: High-ranking Officials

White House elites probably do not pay attention to all private or public statements with equal weight. It is likely that statements from prominent figures or decisionmakers receive greater attention. Most of our analysis is therefore based on counts of DOS and FBIS documents indicating perceived threat, but only when they are from prominent officials and sources.

In Table 2 of the main paper, two negative binomial models use "governmental" sources. The entirety of Table A3 is used to filter documents for this measure. Most entries involve Politburo members. "High-ranking" officials are those with a checkmark in the third column. Note that the key difference between governmental and high-ranking sources is that governmental sources include periodicals and statements generically attributed to the Soviet government.

Table A2 shows the number of relevant segments for each level of source.

	All	**Governmental**	**High-ranking**
DOS	7,777	N/A	743
FBIS	13,576	4,866	2,846

Table A2: Number of relevant segments according to level of speaker.

Table A3: List of governmental and high-ranking officials used to filter DOS and FBIS data.

Name	**Position**	**High**
Aristov, Averky	Politburo member	✓
Belyaev, Nikolay	Politburo member	✓
Brezhnev, Leonid	Premier of USSR	✓
Bulganin, Nikolai	Premier of USSR	✓
Dobrynin, Anatoly	Ambassador to US	✓
Fedorenko, Nikolai	Permanent UN representative	✓
Furtseva, Yekaterina	Politburo member	✓
Gromyko, Andrei	Foreign Minister	✓
Grotewohl, Otto	Prime Minister of GDR	✓
Ignatov, Nikolay	Politburo member	✓
Izvestiya	Newspaper	
Khrushchev, Nikita	Premier of USSR	✓
Kirichenko, Alexei	Secretary of CCCP	✓
Kirilenko, Andrei	Politburo member	✓
Kosygin, Alexei	First Deputy Premier	✓
Kozlov, Frol	Politburo member	✓
Kuusinen, Otto	Politburo member	✓
Menshikov, Mikhail	Ambassador to US	✓
Mikoyan, Anastas	First Deputy Premier	✓
ministry		
Molotov, Vyacheslav	Soviet delegate to IAEA	✓
Mukhitdinov, Nuritdin	Politburo member	✓
Pervukhin, Mikhail	Politburo member	✓
Pieck, Wilhelm	President of GDR	✓
Podgorny, Nikolai	Politburo member	✓
Politburo	Executive committee	
Polyansky, Dmitry	Politburo member	✓
Pravda	Official newspaper	
Saburov, Maksim	Politburo member	✓
Shelepin, Alexander	Chairman of KGB	✓
Shelest, Petro	Politburo member	✓
Shvernik, Nikolay	Politburo member	✓
Sobolev, Arkady	Permanent UN representative	✓
Soviet government		
spokesman		
Suslov, Mikhail	Politburo member	✓
TASS	News agency	
Ulbricht, Walter	Chairman of GDR	✓
Voronov, Gennady	Politburo member	✓
Voroshilov, Kliment	Chairman of Presidium	✓
Zhukov, Georgy	Politburo member	✓
Zorin, Valentin	UN Security Council representative	✓

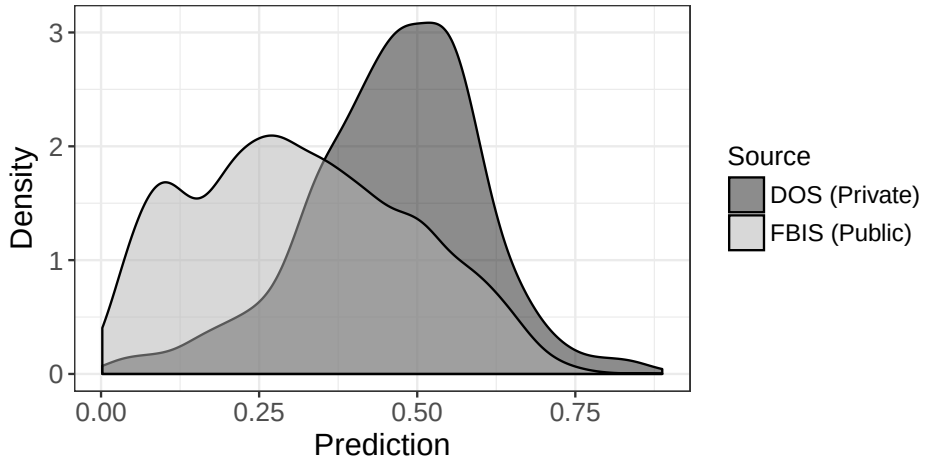
Appendix E: Analysis Using All Documents

Much of the paper's main analyses rely on DOS and FBIS measures that are limited to only high-ranking officials. This is done to avoid biasing results in our favor, since using all DOS and FBIS statements may introduce unnecessary noise.

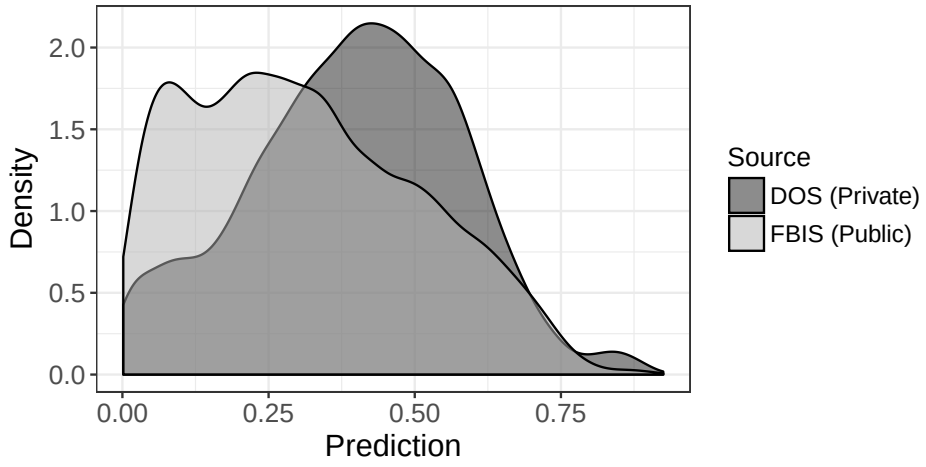
To be comprehensive, this appendix redoes the analyses using DOS and FBIS measures based on all documents.

Variation Across Statements, Revisited

The main text provides information on the variances of all DOS and FBIS documents. Figure A3 is analogous to Figure 3 in the main text. The two figures are roughly similar.



(a) DOS and FBIS documents from high-ranking officials only. (Figure 3 from the main text.)



(b) All DOS and FBIS documents.

Figure A3: Density plots of predicted probabilities of Soviets' willingness to use force.

Diplomatic States' Small Effects, Revisited

Table A4 displays results from negative binomial regressions with the inclusion of control variables used in the PAR(7) models. The main results are essentially unchanged.

Table A4: Results from negative binomial regressions, with controls.

	Dependent variable: White House					
	(1)	(2)	(3)	(4)	(5)	(6)
Private (DOS)						
All cables	0.029*	0.028*	0.027*			
	(0.015)	(0.015)	(0.015)			
High-rank				0.160**	0.154**	0.131*
				(0.069)	(0.069)	(0.069)
Public (FBIS)						
All statements	−0.0003			−0.002		
	(0.015)			(0.015)		
Governmental		0.014			0.007	
		(0.027)			(0.027)	
High-rank			0.084			0.069
			(0.052)			(0.052)
Actions (NYT)	0.236**	0.228**	0.241**	0.262**	0.254**	0.263***
	(0.104)	(0.107)	(0.100)	(0.104)	(0.106)	(0.098)
Election Period	−0.139	−0.136	−0.135	−0.093	−0.091	−0.086
	(0.315)	(0.313)	(0.309)	(0.312)	(0.311)	(0.307)
US-USSR MIDs	0.059	0.068	0.100	0.055	0.062	0.092
	(0.107)	(0.107)	(0.107)	(0.107)	(0.107)	(0.107)
Kennedy	1.871	1.830	1.733	1.841	1.815	1.738
	(1.201)	(1.197)	(1.186)	(1.203)	(1.200)	(1.189)
Constant	−1.536***	−1.562***	−1.652***	−1.584***	−1.600***	−1.663***
	(0.378)	(0.377)	(0.380)	(0.386)	(0.384)	(0.385)
Lagged DVs	3	3	3	3	3	3
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Observations	304	304	304	304	304	304
Log Likelihood	-507.753	-507.596	-505.953	-506.886	-506.856	-505.760
θ	0.970***(0.155)	0.973***(0.155)	1.009***(0.164)	0.971***(0.154)	0.974***(0.154)	1.002***(0.161)
AIC	1,045.505	1,045.191	1,041.906	1,043.772	1,043.713	1,041.520

*p<0.1; **p<0.05; ***p<0.01

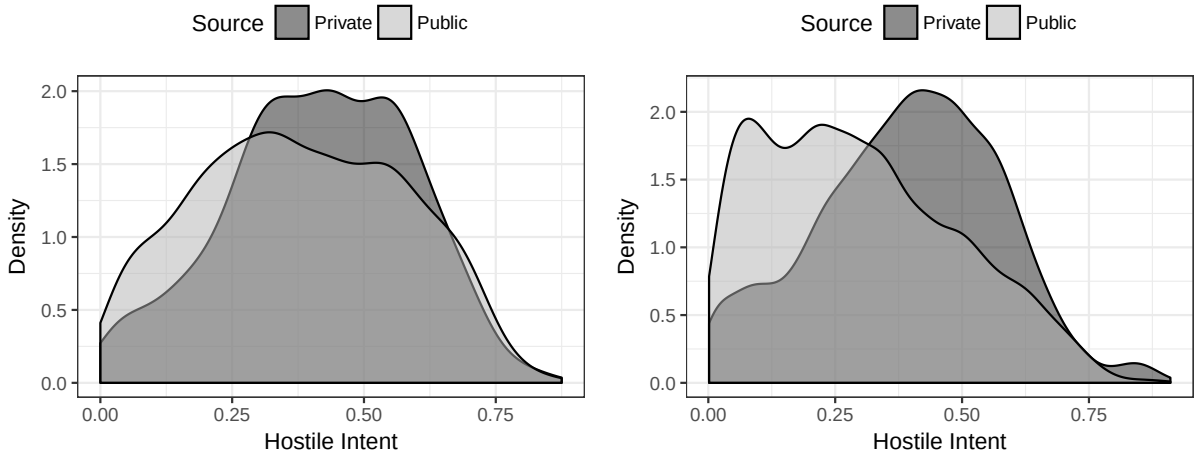
The Core of the Crisis, Revisited

Figure A4 replicates Figure 4 of the main text. The two figures are roughly similar, except that using all documents leads to slightly wider variation in signals. This is true for both DOS and FBIS. Fligner-Killeen tests indicate that this is statistically significant: $p \ll 0.001$ for both sets of data, both during and outside of the peak crisis.

As such, high-ranking Soviet officials appear to send more focused messages than other senders. This observation lends an additional level of support to our argument about how the choice of channel can influence the amount of noise introduced in the information. The choice of individual represents another manner to reshape the communication channel.

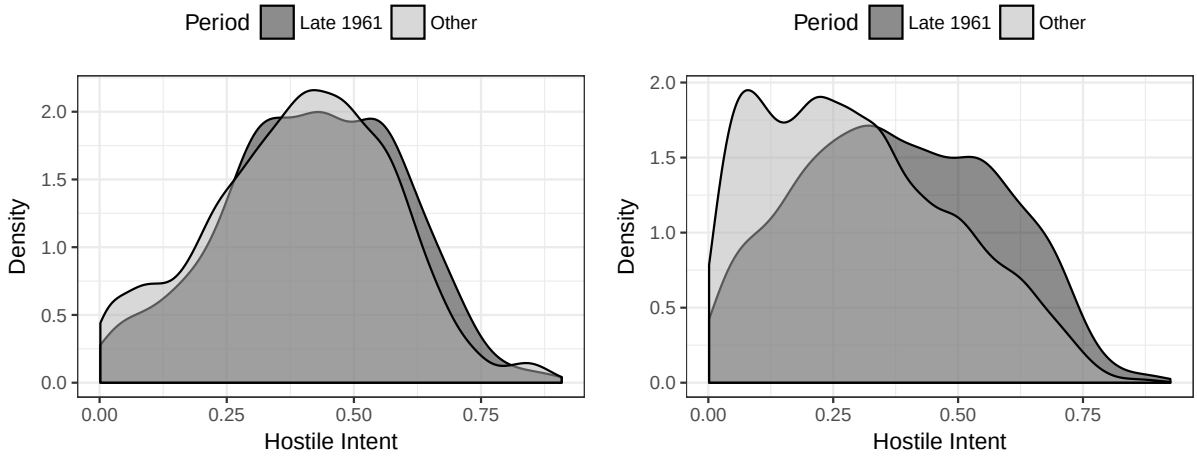
Interestingly, the decrease in variation by looking at only high-ranking officials is especially large for private statements. Variance for DOS statements drops from 0.031 (all DOS) to 0.018 (high-ranking DOS only) during the crisis, and from 0.033 to 0.019 outside of the crisis. Meanwhile, variance for FBIS statements drops from 0.039 (all FBIS) to 0.031 (high-ranking FBIS only) during the crisis, and from 0.036 to 0.028 outside of the crisis. This further suggests that it is easier to refine signals using private channels compared to public channels, which again bolsters our argument about the noisiness of public diplomacy.

Tables A5 and A6 replicate the results in Tables 5 and 6 of the main text. One noteworthy change is that both the t-test and KS test produce statistically significant results for private signals (the first row of Table A5). Across the entirety of State Department documents, statements made during the crisis tend to reflect greater resolve than those outside of the crisis. No such relationship exists when looking at only high-ranking officials' statements. This suggests lower-ranking officials tended to communicate higher resolve during the peak of the crisis.



(a) Late 1961 (Peak of crisis)

(b) Outside peak of crisis



(c) Private signals

(d) Public signals

Figure A4: Distributions of observed Soviet resolve via diplomatic signals. Using all documents.

	Non-Crisis	**Crisis**	t-test	KS test
DOS	0.394	0.416	$p = 0.0004$	$p = 0.006$
FBIS	0.299	0.381	$p \ll 0.001$	$p \ll 0.001$
t-test	$p \ll 0.001$	$p \ll 0.001$		
KS test	$p \ll 0.001$	$p \ll 0.001$		

Table A5: Mean levels of observed Soviet resolve, by signal source and time period. Results of t-tests and Kolmogorov-Smirnov two-sample tests are presented for each row and column. Using all documents.

	Non-Crisis	**Crisis**	FL test
DOS	0.033	0.031	$p = 0.591$
FBIS	0.036	0.039	$p = 0.0006$
FL test	$p \ll 0.001$	$p = 0.005$	

Table A6: Variances in observed Soviet resolve across signals, by signal source and time period. Results of Fligner-Killeen tests are presented for each row and column. Using all documents.

Appendix F: Additional Checks

Here, we perform several supplementary analyses with the PAR(7) model, which are meant to help address potential concerns with the main text's results. See Table A7.

Models 1 and 2 use a five-week moving average of DOS, FBIS, and NYT measures (as opposed to a weekly total). The results are largely unchanged for DOS and FBIS. However, the positive effect of NYT becomes statistically insignificant with the inclusion of controls in Model 2. This is likely a byproduct of the NYT data being relatively sparse. A five-week average severely dilutes variation in the data.

Models 3 and 4 use a one-week lag on DOS, FBIS, and NYT. This goes one step toward reinforcing the validity of (Granger causality). Once again, DOS remains positive and significant, while FBIS remains insignificant. NYT keeps its significance in the simple model and disappears with the inclusion of control variables. This change in NYT may occur for two reasons. First, as mentioned before, the data is more sparse. Second, this may indicate that elites react to costly events very quickly, and that a one-week lag may force an impractical temporal disconnect between a material action and its perception.

Models 5 and 6 combine the FBIS and NYT variables to create a measure of "public signals," without distinction between statements and actions. DOS retains its positive effect, while public signals also have a significant positive effect. Comparing these results to those in Table 3 of the main text, the strong impact of the NYT variable appears to overpower the insignificance of the FBIS data. This further justifies the value of disaggregating the "public signal" data into statements and actions.

Table A7: Results from PAR(7) models with various specifications.

	Dependent variable: White House					
	Five-week moving weighted average		One-week lag		Public statements + Actions	
	(1)	(2)	(3)	(4)	(5)	(6)
Private (DOS)	0.176***	0.147**	0.113***	0.115**	0.126***	0.101***
	(0.053)	(0.069)	(0.027)	(0.047)	(0.029)	(0.037)
Public (FBIS)	−0.099	0.036	0.014	−0.011		
	(0.123)	(0.128)	(0.093)	(0.081)		
Actions (NYT)	0.372***	0.259	0.186***	0.159		
	(0.146)	(0.162)	(0.072)	(0.093)		
Public + Actions					0.118***	0.123***
					(0.039)	(0.044)
Election period		−0.055		−0.400		−0.035
		(0.502)		(0.454)		(0.407)
US-USSR MIDs		0.146		−0.067		0.147
		(0.090)		(0.145)		(0.094)
Kennedy		0.009		−0.038		0.003
		(0.201)		(0.192)		(0.203)
ρ_1	0.141***	0.139***	0.143***	0.143***	0.148***	0.145***
	(0.036)	(0.036)	(0.036)	(0.036)	(0.037)	(0.036)
ρ_2	0.130***	0.128***	0.133***	0.131***	0.134***	0.131***
	(0.034)	(0.034)	(0.035)	(0.034)	(0.035)	(0.034)
ρ_3	0.113***	0.112***	0.117***	0.116***	0.118***	0.116***
	(0.033)	(0.032)	(0.033)	(0.032)	(0.033)	(0.033)
ρ_4	0.048	0.049	0.047***	0.050***	0.048***	0.049***
	0.031)	(0.031)	(0.032)	(0.031)	(0.032)	(0.031)
ρ_5	0.055*	0.055*	0.057*	0.058*	0.050	0.052
	(0.031)	(0.030)	(0.031)	(0.030)	(0.032)	(0.031)
ρ_6	0.079***	0.079***	0.078***	0.080***	0.081***	0.081***
	(0.030)	(0.030)	(0.031)	(0.030)	(0.031)	(0.030)
ρ_7	0.036	0.038	0.038	0.041	0.034	0.037
	(0.030)	(0.030)	(0.030)	(0.029)	(0.031)	(0.030)
Intercept	0.286	−0.070	0.294	0.459	0.384**	0.080
	(0.188)	(0.372)	(0.194)	(0.271)	(0.171)	(0.328)
Observations	300	300	300	300	300	300
Log-likelihood	−503.238	−502.623	−507.958	−507.037	−505.756	−504.589
AIC	1026.477	1031.246	1035.915	1040.074	1029.512	1033.179

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$

Appendix G: COPDAB Data

The Conflict and Peace Data Bank, known colloquially as COPDAB (Azar 1982), is an extant resource that contains information on international interactions between 1948 and 1978. Many of these include events in and around Berlin.

Events in COPDAB are scored on a $1 - 15$ scale, where 1 represents "voluntary unification into one nation" and 15 represents "extensive war acts causing deaths, dislocation or high strategic costs." For this study, we look at events that indicate "diplomatic-economic hostile actions" (11 on the COPDAB scale) or higher in which the Soviet Union takes action regarding Berlin/Germany, or in which the East Germans take actions against West Germany or the United States. 113 events fit these criteria, and are shown on Figure A5. Although COPDAB also has weighted measures for each event category, they lack inherent meaning and make interpretation of any results troublesome. We therefore use raw counts of events per week as the event variable. Figure A6 compares the COPDAB events with the NYT data used in the main text.

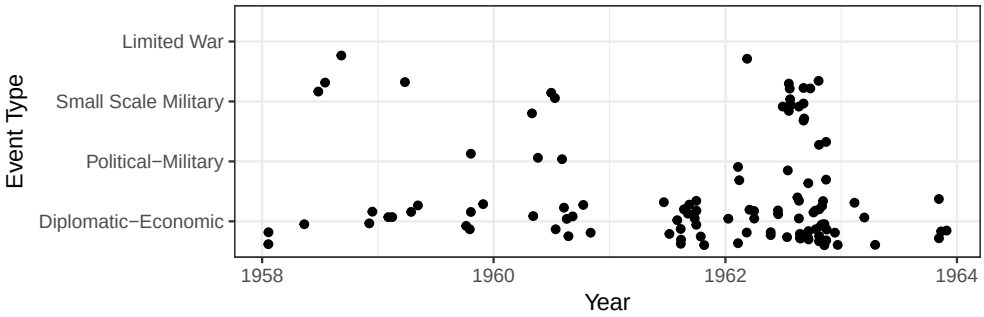


Figure A5: COPDAB events.

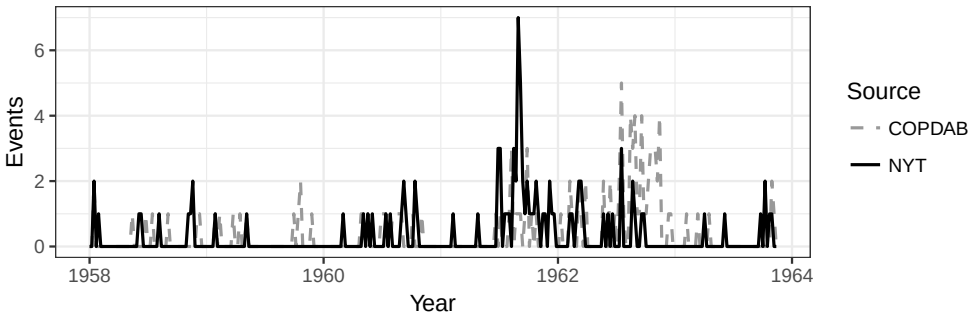


Figure A6: COPDAB vs. NYT data.

There are several potential issues with the COPDAB data, which motivated the collection and creation of new event data based on the *New York Times*.

First, COPDAB is four decades old and probably merits some review. Second, COPDAB does not source its data and descriptions of each event are not always self-explanatory, so it is not possible to reevaluate the events. Third, because events have very short descriptions and COPDAB attempts to record incidents for 135 countries, but it is not immediately clear how to identify which events are related to Berlin versus other interactions between the Western Powers in West Berlin

and the Soviet Union in East Berlin.[45] Fourth, for the purposes of our study, the "strong verbal expressions displaying hostility in interaction" category is troublesome, as actual COPDAB events with this label tend to blur the line between verbal statements and material actions. We want the event variable to capture only material events, since FBIS is meant to represent public verbal statements.

Lastly, COPDAB may be missing some important events. A noteworthy example is the 15-hour detainment of two U.S. Army convoys on October 10, 1963. As noted by the *Washington Post* on October 11, this act was "regarded as the most serious challenge to Western access rights since the Communists build the Berlin Wall." This event is also reported in the *New York Times*, but COPDAB has no record of this incident.

All that said, Table A8 replicates the findings in Table 3 of the main paper, using COPDAB. The main findings are regarding DOS and FBIS are effectively unchanged. However, the effect of actions becomes substantially attenuated and loses significance in some of the $PAR(p)$ models.

[45] We look at the subset of events where the Eastern Bloc (the Soviet Union, East Germany, and East Berlin) acts against the Western Bloc (the United States, West Germany, and West Berlin) and the event description includes the term(s) "Berlin," "Germany," or "reunification."

Table A8: Results from PAR(7) models, using the COPDAB variable.

	Dependent variable: White House			
	All DOS/FBIS		High-ranking DOS/FBIS	
	(1)	(2)	(3)	(4)
DOS	0.035***	0.030**	0.135***	0.123***
	(0.012)	(0.014)	(0.028)	(0.035)
FBIS	0.004	0.013	0.000	0.021
	(0.019)	(0.018)	(0.066)	(0.071)
Action (COPDAB)	0.066	0.040	0.085***	0.075*
	(0.048)	(0.049)	(0.031)	(0.042)
Election period		−0.293		0.021
		(0.577)		(0.347)
US-USSR MIDs		0.122		0.104
		(0.109)		(0.101)
Kennedy		−0.069		0.092
		(0.207)		(0.196)
ρ_1	0.151***	0.144***	0.136***	0.139***
	(0.037)	(0.036)	(0.035)	(0.035)
ρ_2	0.141***	0.134***	0.125***	0.127***
	(0.036)	(0.035)	(0.033)	(0.034)
ρ_3	0.122***	0.117***	0.110***	0.111***
	(0.035)	(0.033)	(0.032)	(0.032)
ρ_4	0.042	0.046	0.050*	0.049*
	(0.034)	(0.032)	(0.030)	(0.030)
ρ_5	0.047	0.052*	0.052*	0.053*
	(0.033)	(0.031)	(0.029)	(0.030)
ρ_6	0.079***	0.080***	0.077***	0.079***
	(0.033)	(0.031)	(0.029)	(0.030)
ρ_7	0.032	0.038	0.040	0.039
	(0.032)	(0.031)	(0.029)	(0.029)
Intercept	0.199	0.004	0.137	−0.117
	(0.219)	(0.384)	(0.217)	(0.348)
Observations	300.000	300.000	300.000	300.000
AIC	1034.150	1036.984	1031.600	1036.494
Log-likelihood	−507.075	−505.492	−505.800	−505.247

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$