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Presidential Personality: Not Just a Nuisance[1]

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Few systematic studies of US uses of force treat the inherent attributes of presidents as the key causal factors; nonetheless, the fact that individual leaders matter is evident to the public, the media, and foreign policymakers in other countries. This study advances the development of First Image explanations of conflict by empirically investigating the relationship between presidential personality and the variation surrounding foreign policy decision making. The importance of this type of variance has been understudied in international relations, and the consistency of leaders' policy decisions has important strategic implications for interstate conflict. Relying on Big Five measures of US presidents' personality traits, we find that leaders who have a high tendency toward Excitement Seeking are more likely to use force to carry out their foreign policy objectives, while those who are more Open to Action exhibit a greater variance around their foreign policy decision making. In sum, the personality traits of individual leaders influence not only the choices they make, but the consistency of their choices, which has important consequences for US foreign policy.

When examining foreign policy, scholars have tended to focus on either the nature of the decision-making process or the outcome of that process. To link the two, we explore how the foreign policy decision-making process affects the variability (and thus the consistency) in outcomes. Research in political psychology and behavioral economics linking personality traits and risk-taking sheds new light on political scientists' attempts to assess how "who leads matters" (Hermann, Preston, Korany and Shaw 2001). In this paper, we consider the potential for unequal variance in American presidents' responses to opportunities to use force. We anticipate that leaders who are risk-takers will not only be more likely to use force to carry out their foreign policy objectives, but that they will be less consistent in their decisions about the use of force, compared to more risk-averse leaders.

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This work builds on Gallagher (2010) who demonstrates that leaders' risk-related personality traits influence their decisions about initiating and escalating international conflict. Here, we show that these traits affect not only foreign policy choices (outcomes), but also the decision-making process (and thus the consistency of leaders' choices). It is common for scholars to control for what are considered the idiosyncrasies of each presidential administration through presidential fixed effects (for example, Fordham 1998; Howell and Pevehouse 2007). The significance of these variables, however, is rarely theorized; the consistency *within* an administration that creates differences *across* administrations is instead disregarded. This study begins to fill in this theoretical gap and highlights the significance of presidents' personality traits on decisions to use force abroad.

Presidential personality is an often-ignored constraint on foreign policy decision making, and we believe it affects a rational actor's optimization process (Braumoeller 2006). Leaders, as rational actors, are thought to make decisions based on the range of options they perceive to be available to them. Institutional constraints have been shown to affect the variance in foreign policy choices of leaders—both within their own states (Clark and Nordstrom 2005) and beyond their borders (Putnam 1988). In a similar manner, a decision maker's personality and dispositions can also influence the options that they perceive as acceptable in a given situation. Some presidents are more risk-acceptant and willing to consider a broader range of behaviors in response to foreign policy crises. These risk-acceptant leaders are likely to perceive more options than risk-averse leaders (Clark and Nordstrom 2005). While risk-acceptant leaders may perceive the use of force as an alternative option for carrying out their foreign policies, leaders who are risk-averse will not seriously consider such actions. Thus, leaders who are risk-acceptant should demonstrate a greater variance in their foreign policy behavior because the options they are willing to pursue to carry out their goals are more diverse. Leaders who are risk-averse, on the other hand, will be more consistent in their foreign policy behavior.

To test this variance argument, we employ a heteroscedastic probit model to assess the effect of presidential personality on opportunities to use force in the international arena. Our findings suggest that by looking at the personality traits of particular presidents, it is easier to anticipate the foreign policy choices of those who are more risk-averse, like George H.W. Bush, than those who are more risk-acceptant, like Bill Clinton.

Determinants of Foreign Policy Decision Making

Scholars of international relations have largely focused on Second and Third Image explanations for foreign policy decisions. The Cold War environment gave prominence to the role of international constraints such as the balance of power, international threats, and military commitments, while more recently the focus of attention has been on domestic factors—both economic and political—that influence US behavior (James and Oneal 1991). The related diversionary war literature proposes that poor economic conditions, like high inflation or rising unemployment, motivate the use of military force to divert attention and improve public appraisal of presidential policy making. Presidential approval and election timing may frame the way that leaders perceive their opportunities to use force. Democratic leaders can manipulate these dynamic political constraints (Clark and Nordstrom 2005), but institutional factors are also relevant because politics does not end at the water's edge (Reiter and Tillman 2002). For instance, Howell and Pevehouse (2007) have demonstrated the impact that institutional constraints, namely the partisan nature of Congress, can have on foreign policy decisions.

Underrepresented in quantitative studies of foreign policy decision making are First Image Explanations, focusing on the influence of individual leaders.[2] Very few studies examining the use of force treat attributes of the leader as the key causal factors; nonetheless, the fact that the individual leader matters is evident to the public, the media, and foreign policymakers in other countries. The dearth of individual-level explanations has two primary causes. First, while studies such as the Georges' (1956) *Woodrow Wilson and Colonel House* highlighted the importance of an individual leader's personality on decision making, the psychobiographical tradition their work was part of was later critiqued for being "inherently subjective" (Song and Simonton 2007:309) and lacking in scientific rigor. Additionally, their focus on the idiosyncrasies of different leaders did little to explain general patterns of behavior across leaders.

Following trends within the field of psychology, political scientists moved away from the psychoanalysis of the leaders' formative years to systematic investigations of leaders' traits, or stable tendencies, motives, and cognitions using "at-a-distance" measures.[3] While these measures of personality are more reliable, this work has been criticized for its reliance on content analysis of the written and/or spoken words of presidents, which may be biased (Schafer 2000). Moreover, these studies have tended to focus on various different elements of personality (for example, integrative complexity, reaction to constraints, operational code), without contributing to one another, or linking to a more comprehensive structure and theory of personality in psychology.

A second reason for the lack of individual-level explanations was the absence of a viable model of personality in the field of psychology (Mondak and Halperin 2008). In the past two decades, however, empirical evidence has provided outstanding support and consensus for a model of personality traits clustered around five broad factors: Extraversion, Openness to Experience, Agreeableness, Conscientiousness, and Neuroticism. This model, known as the Big Five, has become the dominant paradigm of personality psychology (John, Naumann, and Soto 2008).[4] The Big Five model is structured hierarchically. Each of the broad factors is comprised of six specific traits, also known as facets. For example, *Trust, Straightforwardness,* and *Altruism* are all traits that belong to the Agreeableness factor. Table 1 lists each of the Big Five factors and their six component traits. The model's strength lies in its consistency and reliability; these five factors have proven to be universal across gender, ethnicity, culture, and time (McCrae and Costa 1999, 2003; McCrae and Allik 2002).

The Big Five has been employed in clinical settings, business environments, and historical analysis. Since Big Five traits are largely stable through adulthood, they can be used to predict behavior (McCrae and Costa 2003) as well as clarify the motivation behind past actions. Political scientists have recently begun to employ the Big Five in their analyses; however, these studies to date have focused on mass behavior. For instance, scholars have shown that personality traits predict political attitudes and behavior with regard to ideology, campaign participation, voter participation, and candidate preferences (for example, Caprara, Schwartz, Capanna, Vecchione, and Barbaranelli 2006; Barbaranelli, Caprara,

[2] In the last decade, scholars such as Chiozza and Goemans (2004), Horowitz, McDermott and Stam (2005), and Potter (2007) have begun to address this deficiency through leader-centric theories of conflict initiation and escalation. None of these studies, however, addresses the influence of leaders' inherent personality traits.

[3] For an overview of "at-a-distance" measures, see Song and Simonton (2007), Winter (2005), and Walker, Schafer and Young (1998). Margaret Hermann's leadership traits are among the most well-known and employed at-a-distance measures. See, for example, Hermann (1980), Hermann et al. (2001), Boettcher (2005), Keller (2005), Dyson (2006), and Shannon and Keller (2007). Other at-a-distance measures include Winter's (2007) work on leaders' motivations and Walker's (1977) work on leaders' operational codes (for example, Walker and Schafer 2000; Walker, Schafer and Young 2003).

[4] For an overview of the Big Five, see McCrae and John (1992) and John et al. (2008).

TABLE 1. Big Five Factors and Their Facet Traits

Factor	*Facets*
Neuroticism	N1: Anxiety
	N2: Angry hostility
	N3: Depression
	N4: Self-consciousness
	N5: Impulsiveness
	N6: Vulnerability
Extraversion	E1: Warmth
	E2: Gregariousness
	E3: Assertiveness
	E4: Activity
	E5: Excitement seeking
	E6: Positive emotions
Openness to Experience	O1: Openness to fantasy
	O2: Openness to aesthetics
	O3: Openness to feelings
	O4: Openness to actions
	O5: Openness to ideas
	O6: Openness to values
Agreeableness	A1: Trust
	A2: Straightforwardness
	A3: Altruism
	A4: Compliance
	A5: Modesty
	A6: Tender-mindedness
Conscientiousness	C1: Competence
	C2: Order
	C3: Dutifulness
	C4: Achievement striving
	C5: Self-discipline
	C6: Deliberation

Vecchione and Fraley 2007; Carney, Jost, Gosling, and Potter 2008; Mondak and Halperin 2008; Gerber, Huber, Doherty, Dowling. and Ha 2010; Mondak 2010). While these studies have helped to raise the discipline's awareness of the Big Five, they have not applied the Big Five model to leaders' personalities or international relations theory.

Risk Propensity and Foreign Policy Decision Making

Whenever a decision is made where the outcome is uncertain, risk must be evaluated. The approach that individuals take toward the evaluation of risk can influence their choices, as risk is tied to the range of possible outcomes and the relative values that a decision maker assigns to these outcomes. To that end, we recognize that risk is a critical component of choice, and any assessment of that risk is inherently probabilistic (McDermott [1998] 2004:1).

Risk propensity is the likelihood of taking a chance to gain particular benefits or to avoid certain costs (McDermott [1998] 2004:1). A leader's risk propensity is central to understanding his/her resolve or willingness to go to war (Morrow 1985, 1989).[5] Despite the recognized importance of leaders' risk propensities, this variable has been largely understudied. Scholars have long acknowledged

[5] In addition to a greater willingness to take risks, Morrow (1985, 1989) proposes that greater military capabilities and an objectively less favorable status quo are other sources of resolve. The latter two influences have been explored extensively in the international relations literature, while risk propensity has not.

that "an actor's orientation toward risk is a psychological trait best evaluated through an in-depth examination of the decision-maker's personality and environment" (Bueno de Mesquita 1981:123); however, the difficulties in systematically studying leaders have impeded efforts to incorporate individuals' risk propensities in studies of decision making.

It is in part the difficulty in assessing individuals' inherent risk propensities that has led political scientists to most often rely on prospect theory explanations for risk-taking in international relations.[6] While applications of prospect theory have advanced the field, they overlook the importance of inherent differences in decision makers since they consider situational factors (that is, whether the decision is framed as a gain or loss) as the key explanation for risk-taking. That is, leaders, regardless of who they are, are expected to take risks when faced with losses, and avoid risks when faced with gains. There is, however, a burgeoning literature incorporating studies from psychology, behavioral economics, and political psychology that examines heterogeneity in individuals' stable risk preferences. These studies demonstrate that some individuals are prone to take risks (or avoid them) regardless of whether they are faced with a loss or a gain.[7] Related studies investigating the source of these risk preferences have found that these dispositions are related to inherent personality traits.

The rise of the Big Five as the dominant framework of personality traits, has led many scholars to focus specifically on the relationship between Big Five traits and risk-taking.[8] Olson and Suls, for instance, found that people with high Openness, Agreeableness, and Neuroticism factor scores were more likely to make extreme risky judgments. In another study, Kam (2010) found that dispositions toward risk acceptance had a positive, significant correlation with Extraversion and Openness to Experience, and a negative correlation with Conscientiousness.

While studies such as these are important for establishing the relationship between personality and risk-taking, they focus on how risk propensity is related to the more aggregate factors (Extraversion, Neuroticism, Agreeableness, Conscientiousness, and Openness to Experience) largely because these take much less time to assess; scores on the factors can be assessed in as little as ten questions, while a much longer 240-item questionnaire is needed to assess specific traits. Nevertheless, research has shown that the specific traits predict behavior better than the broader factors (Paunonen and Ashton 2001; Paunonen 2003). In this paper, we rely largely on the work of Kowert and Hermann (1997) and Nicholson et al. (2005) who have examined the link between specific traits and risk-taking. The results of their studies indicate that there are certain risk-related personality traits, namely Excitement Seeking, Openness to Action, Deliberation, and Altruism.[9]

Taking Risks by Using Force

When examining risk-taking in international relations, scholars have traditionally focused on decisions to use military force.[10] The expectation has been that lead-

[6] For a comprehensive discussion of the tenets of prospect theory, see Kahneman and Tversky (1979), Levy (2003), and McDermott[1988] (2004:17–33). For an overview of applications of prospect theory to international relations, see Levy (2003); Mercer (2005).

[7] See, for example, Kowert and Hermann (1997), Li and Liu (2008), and Kam and Simas (2010).

[8] See, for example, Kowert and Hermann (1997), Olson and Suls (2000), Lauriola and Levin (2001), Bogg and Roberts (2004), Nicholson, Soane, Fenton-O'Creevy, and William (2005), Soane and Chmiel (2005), and Kam (2010).

[9] For a comprehensive review of the literature on Big Five traits and risk-taking, see Gallagher (2010).

[10] For more on equating military intervention with risk-acceptant behavior, see Vertzberger (1998). Examples of scholarship that examine risk-taking as military intervention include Bueno de Mesquita (1981), Morrow (1987), Huth, Gelpi and Bennett (1993), Tessman and Chan (2004), Boettcher (2005), and Horowitz, McDermott, and Stam (2005).

ers who are risk-acceptant are more willing to use force. Riskier choices are associated with less predictable outcomes, a potential for both extremely negative and extremely positive consequences, and high uncertainty in estimating outcomes (Taliaferro 2004; Boettcher 2005). While it is possible to hypothesize situations where the use of force is not the most risky action a decision maker can choose, there are several reasons that make it the most valid measure for a large-N study of risk-taking.[11] For one, any deployment of military force is truly a risk. As Morrow (1987:423) explains, "Conflict is risky; sometimes initiators win, sometimes they lose, and they never know when they initiate what the outcome will be." Risk-takers are willing to accept a greater chance of potential losses (or adverse outcomes) in exchange for a greater possibility of potential gains.[12] Because risky policy options have more numerous and more extreme potential outcomes, risk-acceptant leaders also accept the possibility of bad outcomes. Risk-averse leaders, on the other hand, select policies that have fewer and more certain outcomes. Thus, it is understood that there is always some uncertainty associated with employing force, and that it creates large divergences in possible outcomes, particularly that the state may experience victory or defeat.

Relative to the use of force, diplomatic strategies are less likely to create such extreme potential outcomes. Employing diplomacy can also be risky, and the consequences of such policies are often uncertain. States may suffer diplomatic defeat or enjoy success, but generally the effects of choosing a diplomatic strategy will not be as extreme as those associated with war. In addition, the pace and volatility of diplomatic negotiations tend to be more limited and more predictable, increasing a decision maker's ability to anticipate the consequences of diplomatic interaction. While uncertainty is inherent in every meaningful foreign policy choice, diplomatic strategies lead to less uncertain outcomes in comparison with military strategies.

In addition to equating risk-taking with willingness to use force, scholars and policymakers alike often attribute a leaders' risk propensity to how (un)predictable they are. Leaders who are more varied in their policy responses effectively "keep the enemy guessing" (Schelling [1960] 1980:200), thereby increasing the uncertainty of their response and the risk of going to war. Sagan and Suri (2003) note in their analysis of Nixon's October 1969 decision to put the United States on high nuclear alert, "Nixon later stated that he learned from observing Eisenhower's actions [in ending the Korean War] that it is important to be an 'unpredictable president': 'If the adversary feels that you are unpredictable, even rash, he will be deterred from pressing your too far. The odds that he will fold will increase and the unpredictable president will win another hand'" (2003:162). While it might be the interest of all leaders to "act" unpredictable, thereby raising their power of their deterrent threat, only those who are risk–takers will be willing to increase the uncertainty of a crisis and potential for war. In other words, leaders who are more risk-acceptant and more inconsistent in their behavior are more likely to engage in brinksmanship—both in terms of the threats that they make and their responses to threats made against them.

Under uncertainty, all actors in a crisis will try to press their advantages as far as possible. This strategy is risky because an opponent's limits are likely to be unknown. Opposing leaders will have a more difficult time predicting exactly where the brink is for risk-acceptant leaders than for their risk-averse counterparts. Engaging in brinksmanship can give leaders bargaining power, but it also increases

[11] For an excellent example of diplomatic risk-taking, see Fuhrmann and Early's (2008) analysis of George H.W. Bush's launching of the 1991 Presidential Nuclear Initiative.

[12] The relationship between negative outcomes and risk-taking was established by studies in behavioral economics including March and Shapira's (1987) empirical analysis of business executives who found that these decision makers attributed risk to the magnitude of possible bad outcomes.

the range of outcomes that can result from a crisis—both positive and negative. Brinksmanship occurs on a slippery slope, creating situations where violence may become impossible to avoid. Risk-acceptant leaders walk this edge because they are willing to accept the risk of violent conflict in exchange for the potential benefits of victory in a crisis. Schelling's "threat that leaves something to chance" only works because carrying out that threat is costly for both sides. To make these threats credible, leaders must display nerve and a disregard for the resultant risk, rather than behaving as the cool rational actors we often portray them to be.

The analysis below examines both of these types of risky behaviors—the propensity to use force and the consistency of leaders' behavior. Attitudes about risk not only affect the way that presidents interact with other states, but risk-averse personality types will also likely be conflict-avoidant vis-à-vis Congress and the American public. A leader's personality limits or expands the range of policies that he or she is willing to pursue in response to a given situation in several ways. Personality is the type of dynamic constraint described by Clark and Nordstrom (2005). Unlike the static institutional constraints that affect all American presidents equally, dynamic constraints like this vary over time. While all presidents are limited by the preferences of the American public and the constitutional separation of powers, not all presidents will respond to these constraints in the same way; the behavior of risk-acceptant personalities is more difficult to predict. For instance, a highly compliant president may feel constrained by a Congress controlled by the opposite party, while a more assertive or excitement-seeking personality may feel emboldened by the challenge (Clark and Nordstrom 2005).

All leaders face decision making under uncertainty. The personality of a particular leader can tell us a great deal about how he or she will choose to deal with that uncertainty. Risk-averse leaders will consistently look to minimize it by making decisions with more certain outcomes, while their risk-seeking counterparts will be more willing to choose options that are associated with less certain outcomes. However, looking only at the outcome of the decision-making process (to use or not to use force) misses important aspects of the nature of risk-taking and risk-acceptant behavior. When we think about personality as a dynamic constraint on decision making, it is easy to envision the ways in which it may affect both the foreign policy choices of individual leaders and the consistency of those choices. The behavior of risk-takers is thus more difficult to anticipate than the behavior of non-risk-takers.

Hypotheses

Analysis of individuals' personality traits using the Big Five model generates falsifiable hypotheses that can be empirically tested. Presidents' risk propensities will be based on four traits that have been found in previous studies in political psychology and organizational psychology to be correlated with risk-taking—Excitement Seeking, Openness to Action, Deliberation, and Altruism (Kowert and Hermann 1997; Nicholson et al. 2005). These variables tap into the stable risk preferences of individuals and allow us to hypothesize whether individuals with high or low scores on these traits are likely to be risk-takers or risk-avoiders.

As discussed above, risk-taking in international relations has traditionally been understood to mean the use of force. However, leaders who are risk-takers should not only be willing to use force more often, but should also be willing to increase uncertainty and raise the risk of war. This type of brinksmanship will manifest itself in the leader having a greater variance in their policy choices. Thus, there are two elements of risky personalities that we are interested in examining—the high tendency to use force and the tendency to vary in their policy choices (thus making it harder for adversaries to predict their behavior).

Although the mean hypotheses (that certain personality traits increase the likelihood of resorting to force) and the variance hypotheses (that certain personality traits increase the consistency or variability of presidential response to opportunities to use force) are related, the implications are distinct. The mean hypothesis offers a prediction of how presidents should respond to a given foreign policy crisis, while the variance hypothesis offers a prediction of the certainty (or uncertainty) that a particular leader will behave as predicted.

The first risk-related personality trait, Excitement Seeking, is a facet of the Extraversion factor. The results of previous studies indicate that individuals who score high on Excitement Seeking are more inclined to take personal risks, such as those related to health, career, and finances, as well as more abstract risks such as those related to foreign policy and finances (Kowert and Hermann 1997; Nicholson et al. 2005). High scorers on this trait crave stimulation and excitement. They live life on the edge and are the people most likely to go skydiving or bungee jumping. It is not surprising then that they are often described as daring, adventurous, spunky, and clever. Those who score low on this trait "feel little need for thrills and prefer a life that high scorers might find boring" (Costa and McCrae 1992:17). As addressed above, using force abroad is a highly risky action. Thus, leaders with high Excitement Seeking scores should be willing to capitalize on opportunities to use force in order to carry out their foreign policy objectives.

Hypothesis 1. *Presidents with higher Excitement Seeking trait scores are more likely to use force abroad.*

Excitement Seeking, however, is unlikely to increase the variability of the policy choices made by these leaders. Indeed, excitement seekers should be quite consistent in their policy choices—they should have a high tendency to use force when given the opportunity to do so. Thus, the foreign policy choices by individuals with high Excitement Seeking scores are more likely to be consistent and will have a lower variance.

Hypothesis 1a. *Presidents with higher Excitement Seeking scores will not have greater variance around their foreign policy choices.*

The second risk-related trait is Openness to Action. Like Excitement Seekers, individuals with high Openness for Action scores are often described as adventurous people who actively seek out risks. These traits are different from one another, however, in their motivations and behavioral manifestations. Whereas individuals with high Excitement Seeking scores are motivated by thrill and arousal, Openness to Action captures more of an individual's open mindedness and desire for variety.[13] Openness can be seen behaviorally in the willingness to try different activities, go to new places, eat unusual foods, or develop multiple hobbies given their wide variety of interests (Costa and McCrae 1992:17). These activities may or may not produce thrills, but they do allow high scorers to be imaginative and versatile; they prefer novelty and like to deviate from the routine. Low scorers on the other hand find change difficult and prefer to stick with the tried-and-true (Costa and McCrae 1992:17). In terms of foreign policy, leaders who score high on this trait, and are therefore open to multiple courses of action, are expected to be more likely to use force than those leaders with low Openness to Action trait scores. The relationship, however, is not expected to be as strong as the tendencies associated with Excitement Seeking since high excitement-seeking tendencies should incline individuals

[13] For instance, someone who is high on Openness to Action, but not on Excitement Seeking, might enjoy taking cooking or painting classes during the week while doing yoga and volunteering on weekends. None of these activities is particularly thrill seeking, but they do demonstrate an interest in variety and trying new things.

to always use force. In the case of more open individuals, they should consider force as an option among many alternatives.

Hypothesis 2. *Presidents with higher Openness to Action trait scores are more likely to use force abroad.*

While the mean equation is valuable for assessing the likelihood that a leader uses force, it tells us little about the consistency of their behavior. The essence of the Openness to Action trait is the individual's desire and willingness to pursue variability. Therefore, it is expected that this trait will be strongly related to the variance surrounding a decision maker's foreign policies. Leaders with high Openness to Action scores should value the variability in the options available to them. Being open to a wide range of policy options should make these leaders' choices much more difficult for adversaries to predict.

Hypothesis 2a. *Presidents with higher Openness to Action scores will have greater variance surrounding their policy choices.*

The remaining two risk-related traits, Deliberation and Altruism, have important implications for leaders' propensity to engage in risky foreign decisions, but do not offer strong predications about the variance or consistency of their behavior. Kowert and Hermann's (1997) study of risk-taking and personality traits concluded that individuals with low Deliberation trait scores were more likely to take risks.[14] Because people with low Deliberation scores often act without thinking of the consequences, they can be thought of as risk ignorers. That is, unlike those who seek out risks and pursue them, they tend to ignore the risks at hand in their haste. Individuals who are not very deliberative tend to be spontaneous, impatient, and are able to make snap decisions when necessary (Costa and McCrae 1992:18). It is possible that the effect of this personality trait will be dampened by the institutional structure of decision making, particularly in the United States, which ensures that some deliberation goes into all foreign policy decisions.

Hypothesis 3. *Presidents with lower Deliberation trait scores are more likely to use force abroad.*

Finally, it is expected that individuals with high Altruism trait scores will be risk-avoiders. High scorers are described as generous and tolerant, while those who score low on Altruism are more self-centered. Given that the more altruistic someone is, the more sensitive they are to the needs of others, it is reasonable to expect that these people may be more concerned with the potential negative consequences their actions may have on others and therefore choose to avoid foreign policy risks, especially those that may have high costs in terms of lives lost (Kowert and Hermann 1997).

Hypothesis 4. *Presidents with higher Altruism trait scores are less likely to use force abroad.*

Data and Methods

Consistent error variance or homoscedasticity is a critical simplifying assumption for many regression-based econometric techniques. If this assumption is violated,

[14] Conversely, Gallagher's (2010) analysis of presidents' foreign policy decision making finds that high Deliberation scores increase the likelihood of a president using force abroad.

the estimates produced are biased. The problems are multiplied if the outcome being modeled is dichotomous (for example, war or no war) because heteroscedastic errors cause inconsistent and inefficient estimates (Greene 1997). If heteroscedasticity is suspected, researchers should test for it and make appropriate corrections such as using robust standard errors or clustering errors by substantively important groupings.

Often when considering foreign policy decision making, scholars have used fixed effects for each president, anticipating that each president will have his own distinct error cluster. While this practice does correct for the econometric challenges, it does not consider the substantive reasons *why* each president might have a unique error variance. Following Downs and Rocke (1979), we believe this unequal variability is potentially substantively interesting, and we believe it can be explained by presidential personality.

Variance models have been employed in order to explore variation within the opinions of individual citizens on complex political issues such as abortion, attitudes toward the IRS, presidential performance (Alvarez and Brehm 1995, 1998). In international relations, variance models have been applied to examine differences resulting from distinct domestic institutional structures (Clark and Nordstrom 2005; Allen 2008) as well as the role of economic interdependence to diminish uncertainty and, as result, the likelihood of militarized conflict (Reed 2003; Clark, Nordstrom and Reed 2008).

When a standard probit model is estimated, we assume that the error variance is consistently equal to 1. Relaxing this assumption for the heteroscedastic model utilized in this analysis, the natural log of σ^2 is estimated and allowed to vary away from 1. The variance of the errors is determined both by the covariates in the model and by their relationship to the outcome of interest, rather than just the outcome itself. The significance level of the estimated σ^2 is tested against the null hypothesis that the variance is homoscedastic—which in this case is the assertion that all presidents have the same variance surrounding their response to international crises. If the estimated σ^2 is significant, then the assumption of homoscedasticity has been violated. If σ^2 is significant in this analysis, there are significant differences in the error variation around each president's decisions.

In order to estimate the heteroscedastic probit model, two equations are created. The first equation models whether or not a president decides to use force when presented with the opportunity to do so, in which the likelihood is a linear combination of domestic, international, and personality factors that influence the decision to use force or not. The second equation is a model of the error variance, allowing for variables to be specified that account for any systematic component of the error term. Once the mean relationship between the outcome and the covariates is accounted for, the variance equation is used to determine whether or not the systematic component of the errors can be explained by one or more independent variables. In the analysis presented here, σ^2 (that is, the variance of the errors) is allowed to vary by individual personality traits. The variance surrounding decisions about the use of force can be thought of as an indicator of a particular president's risk propensity. As explained above, we anticipate larger variances for risk-takers and smaller variances for those who are risk-averse.

Data: Uses of Force and Presidents' Personalities

Our interest in presidential decision making necessitates using a data set where the decision before the president is the unit of analysis. To understand how presidents' personality traits influence their decision making, we must first begin with the population of foreign policy decisions that each president faced. Existing data sets are limited in their utility for this type of study. The Militarized

Interstate Dispute (MID) data set and the US Uses of Force data set (originally compiled by Blechman and Kaplan (1978) and most recently expanded by Howell and Pevehouse (2007)) are the two most common data sets used in the quantitative study of US foreign policy.[15] However, both of these data sets are problematic for this study as we are interested in understanding why some leaders choose force when others do not, as well as why some leaders consistently chose to use or not use force, while others are less consistent in their policy preferences. These data sets are best suited for providing information about the frequency with which leaders choose to use force; they neglect the situations when the president decided not to use force (see online Appendix).

For these reasons, the models below were estimated using Meernik's (2004) Opportunities to Use Force data set. The dependent variable is whether or not the president chooses to use force when given the opportunity to do so. Because we are interested in the variance in a president's decision making, understanding when they chose *not* to use force abroad is just as important for our theory as understanding when they chose to use force. Meernik (2004:12) defines an opportunity to use force as "those situations where we can reasonably suppose that the president considered the use of military force as a policy option."[16] The dichotomous dependent variable therefore captures whether or not a president capitalized on the opportunity to use force abroad.[17]

These data cover the period from 1945 to 1998, giving insight into the behavior of 10 post-World War II American presidents. Of the 605 opportunities, presidents utilized force in 318 cases, or 53% of the time (Table 2).[18]

Presidential Personality

Presidential personality traits are measured using the Revised NEO-Personality Inventory (or NEO-PI-R), which is considered to be the most valid (and most frequently used) measure of the Big Five (John et al. 2008). The NEO-PI-R measures an individual's score on the aggregate five factors, as well as the more specific personality traits, and can be administered in two forms: a self-form and

[15] See Fordham and Sarver (2001) for an examination of the advantages/disadvantages of these two data sets. The authors conclude that the Blechman and Kaplan Use of Force data set is the more appropriate of the two for studying US uses of force abroad.

[16] Meernik's criteria used to identify an "opportunity" or international event that was likely to be perceived as sufficiently threatening to the United States and would therefore cause the president to consider the use of military force are borrowed from Ostrom and Job (1986:10). The criteria for opportunities, listed below, come from attributes of situations where presidents did use force in the past as defined by Blechman and Kaplan (1978). For an explanation and defense of this method of "criterion matching," see Meernik (2004:13–14). Opportunities are operationalized as situations where there was evidence of one of the following: (i) The situation involved a perceived current threat to the territorial security of the United States, its current allies, major clients, or proxy states; (ii) The situation posed a perceived danger to US government, military, or diplomatic personnel; to significant numbers of US citizens; or to US assets; (iii) Events were perceived as having led, or likely to lead, to advances by ideologically committed opponents of the United States (that is, communists or "extreme leftists' broadly defined) be they states, regimes, or regime contenders; (iv) Events were perceived as likely to lead to losses of US influence in region perceived as within the US sphere of influence, especially viewed as Central and South America; and (v) Events involved interstate military conflict of potential consequence; in human and strategic terms; or events, because of civil disorder, threatened destruction of a substantial number of persons.

[17] While the purpose of using this data set was to correct for the selection bias of studies that only look at cases where force was used, Howell and Pevehouse (2007:246–7) point out the bias that is introduced by relying on whether or not the president perceived a threat for an event to enter the data set. They therefore create their own data set of "opportunities" based on a third party's observations: *New York Times* cover stories. This data set is currently unavailable. For a comprehensive critique of Meernik's operationalization of "opportunity" and the general limitations of this data set, see Howell and Pevehouse (2007:245–7).

[18] We thank an anonymous reviewer for pointing out that this high probability of capitalizing on the opportunity to use force may be due to the data set not capturing enough of the cases where presidents had the opportunity to use force and chose not to do so. Presumably, the president of the United States can create opportunities to use force (Ostrom and Job 1986) just as much as they respond to opportunities created by other states.

TABLE 2. Presidents and Meernik's Opportunities to Use Force*

President	*Opportunities*	*Uses of Force*	*Frequency (%)*
Truman	40	11	27.5
Eisenhower	82	50	60.9
Kennedy	55	35	63.6
Johnson	66	39	59.0
Nixon	54	16	29.6
Ford	25	8	32.0
Carter	45	20	44.4
Reagan	110	74	67.2
Bush	51	24	47.0
Clinton	77	41	53.2
Total	605	318	52.5

Note. *Data from Meernik (2004). The data set only covers the period from 1948 to 1998; therefore, data for both the Truman and Clinton presidencies are incomplete.

an observer form. The self-form is a questionnaire to be completed by the subject herself, while the observer form "is designed to be completed by a family member, friend, acquaintance—or anyone who knows the person well. The rater does not need to have personal contact with the person rated, just have an adequate information base about the person's behavior and characteristics" (Rubenzer and Faschingbauer 2004:5).

The data on presidential personality traits were collected by Rubenzer and Faschingbauer (2004). Presidential biographers, or "specialist raters," were asked to complete the observer form of the NEO-PI-R. The data are based on the 176 completed questionnaires filled out by 115 presidential specialists (some had written books on more than one president) and Rubenzer and Faschingbauer. The number of raters for each president ranged from 1 to 13, with an average of 4.1.[19]

Control Variables

In addition to presidents' risk-related personality traits, domestic and international political factors that influence decisions to use force are also accounted for in our analysis. One important explanation for the use of force is the diversionary force hypothesis. Leaders may be tempted to divert public attention away from flagging domestic conditions by using foreign intervention. Scholars have looked at both poor economic and political conditions to predict diversionary behavior. While research on the "rally 'round the flag" hypothesis has produced mixed results (Ostrom and Job 1986; Meernik 1994; Howell and Pevehouse 2005), economic factors have consistently been found to be significant predictors of the use of force abroad (Fordham 2002). In order to control for this relationship, two measures of economic performance are included in the analysis—the inflation rate and the unemployment rate (Howell and Pevehouse 2005). The inflation rate is measured as the percentage change in the consumer price index (CPI) according to the US Bureau of Labor. The unemployment rate numbers also come from the US Bureau of Labor statistics.

Domestic political conditions may also affect a president's likelihood of using force in a crisis. Ostrom and Job (1986) found that the public's appraisal of presidential performance is a significant predictor of the use of force; however, recent research has not consistently supported these results (Meernik 1994;

[19] The standard deviation is 2.9. In the NEO-PI-R Professional Manual, Costa and McCrae (1992:48) note that four is the optimal number of raters as "there are diminishing returns for aggregating more raters."

Fordham 1998; Howell and Pevehouse 2005). Nevertheless, a measure of approval is included as a control in the model. Presidential approval is measured by Gallup approval scores for the period prior to the crisis.

While the president has a great deal of latitude in foreign policy, the Constitution does place checks on this power. For this reason, we also must consider the relationship between Congress and the president. When Congress is controlled by the president's party and power is unified, the expectation is that there will be fewer objections to the choice to use force. When Congress and the president are from competing parties, Congress may prove more obstructionist (Howell and Pevehouse 2007). To control for these institutional constraints, we include a variable for whether there is a unified or divided government.

Finally, we look beyond national borders for international factors that should affect the likelihood that the president will resort to force. First, prior international commitments must be considered. Participation in an ongoing war diminishes the resources available for additional uses of force and will likely reduce public support for additional uses of force (Fordham 1998; Howell and Pevehouse 2005). On the contrary, an earlier use of force in the area should increase the likelihood that a president again chooses to use force there (Meernik 2004). Power is also a consideration given that it affords the United States the ability to use force. Therefore, a measure of the United States' relative share of global capabilities (CINC from the Correlates of War) is included as well.

Results

For comparison sake, we begin with a simple probit model estimating United States uses of force. For this model, the errors are clustered by president. The most notable result from this baseline model is the finding that if a president has used force in the area at an earlier time, his likelihood of using force again increases. To get a sense of the substantive impact of the results, we estimated predicted probabilities using *Clarify* (King, Tomz and Wittenberg 2000).[20] We found that the likelihood that a president who had never used force would do so in an average situation was 45%, compared to nearly 71% for a president who had employed force in the area earlier in his term.

Next, we add in the presidents' risk-related personality traits. This is an improvement over simply clustering the errors because it enables us to identify differences between presidents that cause them to have uneven error variances. A likelihood ratio test shows that this model, shown in Table 4, is an improvement over the baseline model presented in Table 3. Substantively, the results in this model are similar to those presented in Table 3. Prior use of force in an area increases the likelihood of a president opting to employ military force, and an ongoing use of force decreases that likelihood. In addition, the United States' relative power in the international system now attains statistical significance and has a positive relationship with the decision to use force. To provide sense of the magnitude of this effect, using *Clarify*, the probability of the president using force when the United States' CINC score was at its minimum for the sample (0.131 in 1982 under President Reagan) is 39% and 70% when it is at its maximum (0.391 in 1951 under Truman).

Turning to the personality variables, all four of the risk-related traits are statistically significant. As expected, Excitement Seeking is positively related to the likelihood that a president capitalizes on the opportunity to use force. Holding all other variables constant, a president with the highest Excitement Seeking score (like John F. Kennedy) is nearly 50% more likely to use force than one

[20] Predicted probabilities were estimated with all other variables held at their mean, or their median in the case of dichotomous variables.

TABLE 3. Baseline Probit Model—Opportunities to Use Force

Variable	*Coefficient*	*Std. Err.*
Unemployment	0.071	0.053
Unified Government	−0.011	0.144
Prior Use	0.711***	0.144
Ongoing War	−0.239	0.155
Presidential Approval	0.002	0.007
Consumer Price Index	−0.183	0.252
Power (CINC Score)	0.144	1.364
Intercept	−0.609	0.442
N	605	
Log-likelihood	−390.978	
$\chi^2_{(7)}$	385.352	

Note. Significance levels: *10%, **5%, ***1%.

TABLE 4. Probit Model with Personality Traits—Opportunities to Use Force

Variable	*Coefficient*	*SE*
Unemployment	0.068	0.055
Unified Government	−0.052	0.142
Prior Use	0.647***	0.122
Ongoing War	−0.422*	0.220
Presidential Approval	−0.007	0.005
Consumer Price Index	0.011	0.165
Power (CINC Score)	4.741**	1.961
Excitement Seeking	0.048***	0.011
Openness to Action	−0.014*	0.007
Deliberation	0.026***	0.009
Altruism	−0.013**	0.007
Intercept	−3.620***	1.104
N	605	
Log-likelihood	−379.849	
$\chi^2_{(11)}$	71.469	

Note. Significance levels: *10%, **5%, ***1%.

with the lowest (like Harry Truman). The same pattern holds for leaders with high Deliberation scores. Highly deliberate leaders are 32% more likely to use force than less deliberate leaders. On the other hand, counter to our expectations, the results suggest that being highly Open to Action weakly decreases the likelihood of using force. This negative relationship also holds for Altruism. Highly altruistic leaders are less likely to employ military force—about 20% less likely than their less altruistic counterparts.

In Table 5, we present a heteroscedastic probit model that allows the variance to be modeled as a function of the presidents' personality traits.[21] The results demonstrate that leaders with higher Excitement Seeking scores are significantly more likely to use force when given the opportunity to do so. This provides support for Hypothesis 1 that leaders with higher Excitement Seeking scores are more likely to engage in risky foreign policy. These individuals are thrill-seekers,

[21] The heteroscedastic probit models were estimated with a variety of starting values (using Stata's –ml- function that will allow for starting values to be set in a manner that is not possible using –hetprob-) in order to avoid some of the potential pitfalls of this type of model highlighted by Keele and Park (2005).

Table 5. Heteroscedastic Probit—Opportunities to Use Force

Variable	*Coefficient*	*Std. Err.*
Mean Equation		
Unemployment	0.234*	0.132
Unified Government	−0.270	0.309
Prior Use	1.274***	0.381
Ongoing War	−0.382	0.288
Presidential Approval	−0.012	0.009
Consumer Price Index	0.086	0.260
Power (CINC Score)	12.936**	5.686
Excitement Seeking	0.077***	0.025
Openness to Action	−0.004	0.019
Deliberation	0.030*	0.018
Altruism	−0.024**	0.011
Intercept	−7.658***	2.952
Variance Equation		
Excitement Seeking	0.465	0.382
Openness to Action	0.945***	0.358
N	605	
Log-likelihood	−376.067	
$\chi^2_{(11)}$	23.377	

Note. Significance levels: *10%, **5%, ***1%.

with high-risk propensities. The differences in the size of the effect from the standard probit and the heteroscedastic model are displayed in Figure 1.

Interestingly, however, leaders with high Excitement Seeking scores do not have a significantly different variance surrounding their actions than do other leaders. These results confirm our expectation in Hypothesis 1a that excitement seekers *consistently* take greater risks than others.

Surprisingly, Openness to Action does not attain statistical significance in the mean equation, which is in contrast to the traditional probit model where it was statistically significant, albeit in the opposite direction than predicted. Although this trait has been linked to risk-taking behavior, contrary to Hypothesis 2, these results indicate that being more open to action does not seem to increase the likelihood of a leader using force. Keeping in mind that Openness to Action means a willingness to try new things, rather than keeping with a routine or what

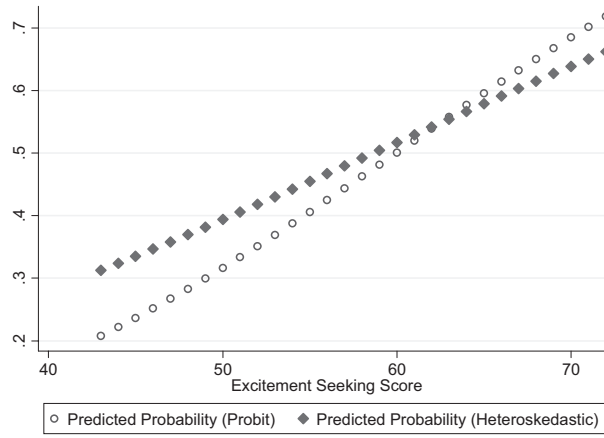

Fig 1. Comparison of Probit and Heteroscedastic Models

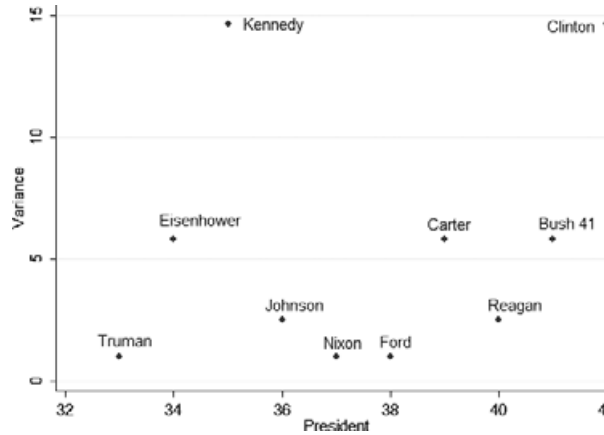

Fig 2. Estimated Variance by President

is common, the results suggest that those leaders who are willing to consider alternatives are less likely to choose to use force to carry out foreign policies.[22] These leaders are more open to accepting high-risk foreign policies; however, they are likewise more open to low-risk ones as well. Being open and willing to break from the routine is what matters to these individuals. This tendency toward change and variety is evident in the variance model and lends strong support for Hypothesis 2a. The results indicate that presidents with higher Openness to Action scores demonstrate a significantly greater variance in their foreign policy responses. Such presidents seek variety, not necessarily thrills, and therefore, they are less consistent in their behavior. Given that this trait was expected to most readily tap into the consistency of a president's decision making, this finding adds considerable strength to our argument that differences in presidential personality are important for understanding the variance in policy outcomes.

Because heteroscedastic probit coefficients are not easily interpretable, we also calculated predicted probabilities based on this model. Holding all variables at their means (or medians when appropriate), the likelihood that an American president capitalizes on the opportunity to use force is 56%. Focusing first on the mean equation, a change from the lowest Excitement Seeking score among these presidents to the highest score increases the likelihood of the use of force by 20%. In comparison, presidents who have previously used force in the area are 10% more likely to use force when presented with the opportunity to do so again. The United States' share of power in the international system also has a significant impact on the likelihood of the use of force. Increasing this variable from its minimum to its maximum increases the likelihood of the use of force by 18%. Thus, the substantive effects of presidential personality in predicting the likelihood of the use of force are as important, if not more, than traditional explanations for the use of force.

On the variance side, estimated variances for each president have been plotted in Figure 2. The range of these estimates demonstrates the importance of estimating the heteroscedastic model. In the simple probit model, the variance is normalized to 1, which would be appropriate for only Presidents G.H.W. Bush, Carter, and Eisenhower. For Presidents Clinton and Kennedy, holding the

[22] Support for this finding comes from previous studies that link high scores on the Openness to Experience factor to liberal ideology and opposition to war (for example, Caprara et al. 2006; Barbaranelli et al. 2007; Schoen 2007; Carney et al. 2008; Mondak and Halperin 2008; Jost, West and Gosling 2009; Gerber et al. 2010; Mondak 2010).

variance constant at 1 underestimates the variability in their decision making. Presidents like Reagan, Lyndon Johnson, Nixon, and Ford are very predictable in their decision making, so normalizing the variance to 1 overestimates their variability. Truman has the lowest estimated variability in his decision making.

Conclusions

Previously, scholars have examined the impact of various contextual factors on US uses of force abroad with emphasis on economic conditions, domestic institutions, and relative strength of the United States. In contrast, this study assesses the decision to use force as a function of presidents' posture toward risk. Our analysis addresses not only whether leaders' risk-related personality traits indicate a tendency to use force, but also whether these traits influence the consistency of leaders' choices. While the former question has been explored elsewhere (Gallagher 2010), this is the first study to examine and explicitly model the latter.

In our analysis, we find strong evidence that personality and risk propensity affect not only the choices that leaders make but also the consistency with which leaders make their choices. Leaders who score high on Openness to Action appear to consider a wider range of policy options than those leaders who have less open personalities. The findings presented here demonstrate the substantive importance of the unequal variance surrounding leaders' foreign policy decision making. Allowing the value of sigma squared to vary by personality trait, we find that while Excitement Seeking increases the likelihood of using force, Openness to Action increases the variance (and thus diminishes the predictability) of presidential decision making.

The substantive importance of these findings should not be limited to just understanding decisions to use force. First, these findings add support to the growing literature on leader-level influences on international relations. Second, the variance surrounding presidents' foreign policy decisions has implications not only for the United States but also for its adversaries. Presumably, presidents who exhibit a greater variance in their foreign policies are better at deterring threats from other states. More complete information is available to an adversary that knows they are dealing with a president who is consistently willing to use force (that is, a risk-taker with high Excitement Seeking scores). If they threaten this president, they can be fairly certain about the foreign policy response. On the other hand, if they are dealing with a president who demonstrates inconsistency in their foreign policy responses (that is, a risk-taker with higher Openness to Action scores), they will likely be uncertain of what their response will be. The results of this paper suggest that the latter president will not be more likely to respond with force; thus, there are incentives when dealing with such a president for the adversary to offer them diplomatic alternatives to force. Nevertheless, the uncertainty of their response should make an adversary leery of challenging them.

From a methodological standpoint, detection of uneven error variance and correction for this heteroscedasticity is essential for drawing valid conclusions from empirical, regression-based techniques.[23] At the same time, exploring why these data anomalies exist is also important theoretically. While it is often advantageous to make simplifying rational actor assumptions, we know intuitively that despite the fact that both men served as President of the United States, the personalities of John F. Kennedy and Dwight Eisenhower dictated distinct atti-

[23] Beyond the econometric inefficiencies associated with this heteroscedasticity, the unequal variance highlighted may illustrate why military conflict occurs. This unpredictability is one form of uncertainty. When an adversary in the international system has difficulty anticipating the actions of the US president, overly large demands may lead to unintended uses of force or escalation of conflict.

tudes toward risk-taking in foreign policy. This paper contributes to our understanding of how who leads matters and encourages future studies on foreign policy to be more mindful of the importance of decision makers' personalities.

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Supporting Information

Additional Supporting Information may be found in the online version of this article:

Appendix S1. Alternative Specification of the Dependent Variable: Quarterly Uses of Force.