

The Missing Link between System Structure and State Behavior:  
German Perceptions of Power in Pre-World War One Europe

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ABSTRACT

Do leadership perceptions of relative power distribution in a competitive system tend to differ from the objective distribution of power in that system? If so, how does this difference influence our understanding of the connection between relative power and state behavior? In this article, we draw insight from the fields of cognitive, social, and political psychology, diplomatic history, and international relations in order to develop and test a “Perceptions of Power” (PoP) model that more accurately tracks leadership perceptions of relative power in competitive systems. We use and transform capability data from pre-World War One Europe in order to generate PoP scores that track German perceptions of relative power in Europe between 1871 and 1914. We then conduct a systematic and detailed analysis of diplomatic documents from that time period in order to assess the PoP model and demonstrate that it has greater external validity than raw national capability scores. We find that this is particularly the case when it comes to identifying the point in time at which Germany reaches power parity with Great Britain, and accounting for the anxiety that Germans leaders felt because of the specific way in which Russia recovered after its defeat in the Russo-Japanese War. Both of these improvements offer a great deal of insight for scholars that are interested in understanding both the motivation and timing of German strategy in the years prior to World War One. In addition, we are optimistic about the generalizability of the PoP model. In as much as it can be applied to other systems and time periods, it may be able to uncover new ways to connect the systemic distribution of relative power to actual foreign policy outcomes.

## INTRODUCTION

A great tradition of international relations scholarship links the global distribution of power with various international outcomes. Research in this area assumes that national leaders react, either automatically or intentionally, to specific power balances or trends by pursuing various foreign policy strategies such as balancing, bandwagoning, or even armed conflict (Levy, 1987; Schweller, 1994; Waltz, 1979). Empirical testing in this area requires the analyst to identify relative power trends for pertinent actors and then uncover any correlation that might exist between certain trends and strategies. The literature largely ignores, however, the process by which leaders develop perceptions about their country's relative standing in the international system. Instead, it generally accepts that foreign policy strategies originate from an objective awareness of relative power balances and trends. As Aaron Friedberg (1988: 8) argues, "The intervening mechanisms of perception, analysis, and decision are usually overlooked or their outcomes are considered to be preordained."

In this article, we address the gap between system structure and foreign policy behavior by using insight from cognitive, social, and political psychology, diplomatic history, and international relations in order to develop and test a "Perceptions of Power" (PoP) model that more accurately tracks leadership perceptions of relative power in the international system. We use and transform capability data from pre-World War One Europe in order to generate PoP scores that track German perceptions of relative power in Europe between 1871 and 1914. We then conduct a systematic and detailed analysis of diplomatic documents from that time period to assess the PoP model and demonstrate

that it has greater external validity than raw national capability scores. We find that this is particularly the case when it comes to identifying the point in time at which Germany is estimated to achieve power parity with Great Britain, and accounting for the anxiety that German leaders felt because of the specific way in which Russia recovered after its defeat in the Russo-Japanese War. Both of these improvements offer a great deal of insight for scholars that are interested in understanding both the motivation and timing of German strategy in the years prior to World War One. In particular, we find evidence in support of those scholars that interpret Germany's strategic calculus as best interpreted through the lens of preventive war and a shrinking window of opportunity vis-à-vis its rapidly ascending Russian rival. This interpretation runs counter to more traditional emphases on either a supposed power transition between Germany and Great Britain, or miscalculations associated with the July Crisis. We are also optimistic about the generalizability of the PoP model. In as much as it can be applied to other systems and time periods, it may be able to uncover new ways to connect the systemic distribution of relative power to actual foreign policy outcomes.

Indeed, we argue that the Perceptions of Power (PoP) model completes the connection between objective shifts in global power, leadership awareness and understanding of those shifts, and resulting foreign policy decisions. The PoP model treats perceptions as a "missing link" between power and behavior. In this paper, we use the PoP model as a way to connect "long-term changes in the distribution of power with short-term perceptual explanations of the onset of war" (Wohlforth, 1987: 381). In doing so, we build upon important work that addresses learning and analogical reasoning in international relations (Khong 1992).

The PoP model is based on three elements that are central to our understanding of leadership perceptions: cognitive anchoring and adjustment, framing effects, and reassessment after major internal or external crises. By transforming raw scores into PoP scores, we are able to account for the role of major crises as anchoring events, the search for cognitive consistency in adjusting to new information, the different ways in which leaders adapt to relative gains and losses, and the likelihood that leaders will update assessments of their own power more frequently than they update their assessments of other countries.

The rest of this article is designed to elaborate on the theoretical foundations, methodology, and application of the Perceptions of Power model. In the next section, we address the theoretical foundations of the PoP model by discussing literature on anchoring effects, cognitive consistency, prospect theory, and war termination as they relate to the construction of the PoP model. The second section outlines the specific coding rules and methods that are used in order to transform raw capability data into PoP scores. The third section presents PoP scores that track German leadership perceptions of relative power in Europe between 1871 and 1914. The external validity of the PoP model is tested by comparing estimated PoP scores to perceptions of power that are highlighted by evidence from primary historical documents. While we do not expect PoP scores to perfectly match the perceptual evidence we find in the historical documents, we argue that the PoP scores track perceptions more accurately than raw national capability scores. We conclude with a few ideas about future research and applications of the PoP model.

## THEORETICAL FOUNDATIONS

At the core of the PoP model is the assumption that leadership perceptions of relative power in a competitive system will be influenced heavily by the tendency to maximize cognitive consistency and the minimize cognitive dissonance. While decision-makers continually reassess their own power and that of others, overall *perceptions* of power are remarkably stable over time, changing primarily by moments of trauma and crisis. This will be the case when it comes to self-perception and perceptions of other key states in the system. If they are severe enough, new crises will force decision-makers to completely reevaluate their relative power and that of others. In this situation, the resulting perceptual change can be severe and nonlinear. Furthermore, we can deduce from the logic of framing effects that positive and negative feedback – drastic or otherwise – will be assimilated differently. Relative power gains from a previous status quo will be renormalized more quickly and easily than losses. Moreover, leaders will make larger and more frequent adjustments to perceptions of their own country's power than they will to their perceptions of others. By synthesizing the processes of anchoring, cognitive consistency, and framing, we can begin to build the theoretical foundations necessary to formally model leadership perceptions of power.

### **Reluctance to Abandon Initial Perceptions**

“They who are in the sinking scale do not easily come off from the habitual prejudices of superior wealth, or power ... They who are in the rising scale do not immediately feel their strength” (Viscount Henry St. John Bolingbroke, 1809).

The concept of anchoring emerged as psychologists observed impaired judgment when individuals faced a suggested answer, even if implausible or irrelevant, prior to estimating a certain value in an experiment. This suggestion came to be known as an anchor, weighing the estimated value towards the suggestion much like the anchor of a ship prevents it from drifting away. The anchoring effect is relevant in multiple contexts, ranging from attitudes about the likelihood of nuclear war to estimations of personal ability (Cervone and Peake, 1986; Plous, 1989; Wegener et al., 2010). In accordance with literature regarding self-affirmation, initial decisions also function as anchors for re-evaluations of the same question over time (Epley and Gilovich, 2010).

Generally, decision-makers are not motivated to update their initial perceptions: they ignore discrepant information and make perceptual changes only in incremental fashion. (Epley and Gilovich, 2006; Jacowitz and Kahneman, 1995; Mussweiler and Strack, 2004; Plous, 1989; Tversky and Kahneman, 1974). Laboratory experiments and other related research address the cognitive process behind such effects: participants first analyze a suggested value – known as the anchor -- for validity; upon finding it inaccurate, they adjust its value until it seems plausible (Blakenship et al., 2008; Epley, 2004; Quattrone, 1982; Wilson et al., 1996). The result is insufficient adjustment, an estimate of the target value that is in the extreme of the range of plausible values (Epley and Gilovich, 2006; Mussweiler & Strack, 2001; Quattrone, 1982; Quattrone et al., 1981; Tversky and Kahneman, 1974). State leaders fall victim to this same bias in calculating their own status and the power level of others in their system.

The search for cognitive consistency results in the “strong tendency for people to see what they expect to see and to assimilate incoming information to pre-existing

images” (Jervis, 1979: 117). This provides the starting point for our connection of anchoring, adjustment, and perceptions of power: “The stability of policy is increased because perceptions are slow to change ... actors will proceed longer down blind alleys before they realize that their basic assumptions need revision” (Jervis, 1979: 191). While Jervis (1979) is writing here about the stability of policy, his theory applies to perceptions of power as well. Leaders hold on to established views of power relations rather than significantly updating their perceptions. When they do update, it is often insufficient relative to actual differences in material capabilities (Epley and Gilovich, 2006). Additionally, decision-makers will seek out and emphasize information that confirms what they already know. In the case of power assessment, this could mean leaders will pay more attention to subsets of information, such as naval power or economic stability, that confirm their beliefs rather than other assessments that would require further adjustment. When participants in experiments are asked to estimate the target value, they “rely primarily on easily accessible knowledge” (Higgins, 1996; Mussweiler, 2001; Strack and Mussweiler, 1997; Wyer & Srull, 1989). This results in a new “target” estimate that is very similar to the anchor and further away from the true value of the question at hand.

Anchoring and cognitive consistency can be applied to our understanding of how leaders evaluate relative power levels over time. After an initial image is formed, competing indicators of power are discredited, increasing the image’s inertia and the amount of unambiguous feedback necessary to change it (Bruner, 1957). The process of evaluating new capability indicators, which are numerous and uncertain in nature, requires high-elaborative thinking. With high-elaborative thinking, the anchoring effect is

far more persistent, resistant to challenges, and influential over future behavior (Blakenship et al., 2008; Wegener et al., 2010). In context of power assessment, the original perception of a state's relative power will be quite resilient, even in the face of discrepant information or challenges from others.

Additionally, this new wave of literature concludes there is a difference between self-assessment and estimations of others:

“We spend considerably more time stewing over our own strengths and shortcomings than those of our peers. In addition, self-representations tend to be both affectively important to the self ... highly complex factors that promote accessibility ... [and based on] a greater database of information” (Kruger, 1999: 223).

In other words, people self-analyze far more than they consider others and have much more information about themselves to process than they do for others. This results in more frequent and more reliable updating. Likewise, state leaders have a wide range of capability data regarding their own state, but only limited intelligence and estimates of others; moreover, they will place greater importance on self-assessment than on assessments of others. In relative power assessment, one would expect leaders to update self-perceptions more frequently and significantly than their perceptions of other states.

A multitude of other factors such as expertise, assessment difficulty, and credibility all influence the extent to which the anchor value influences subsequent perceptions. Research evaluating decisions made by professional realtors and experienced judges suggests that the anchoring effect is relevant “not only among the general population, who are considered to be naïve with respect to the domain in question, but also among experts, who might have been expected to know better” (Sailors and Heyman, 2011: 1037). Though we might expect state leaders and their intelligence



sources to have more expertise in making power calculations, they would fall victim to the same biases as the average person. Counter-intuitively, assessments that are considered more difficult by the participant invoke greater overconfidence in the final decision (Block and Harper, 1991). Because relative power assessments are notoriously difficult for state leaders, we expect that they will be exceedingly confident in their estimations. As a result, that estimation will serve as a very strong anchor in subsequent years (Janiszewski and Uy, 2008; Wegener et al., 2010).

### **Breaking through Anchored Beliefs**

Anchoring is a pervasive bias in how people make decisions and judgments, which is only broken through an extreme event. Because “all but the most unambiguous feedback will be seen as confirming,” leadership perceptions of national power will normally change incrementally, relying heavily on the anchor (Jervis, 1976: 261). In order for those entrenched ideas to be suddenly and decisively cast away, countries have to suffer through a traumatic national event that highlights the failure of old calculations. In other words, “Most national leaders will not examine their prejudices and stereotypes until they are shaken and shattered into doing so” (Stoessinger, 1990: 194; Allison and Zekilow, 1999). Robert Jervis (1976: 308) adds that, “Greater change will result when discrepant info arrives in a large batch than when it is considered bit by bit.” In other words, if new information requires only small adjustments from previous beliefs, the anchor will bias decisions; however, if a “large batch” of discrepant information arrives, this requires a complete reassessment of previous beliefs and the discard of the previous anchor.

An indisputable aspect of conflict is that each side learns more about themselves and the other party through interaction. Slantchev (2003: 621) argues, “if war results from disagreement about relative strength, then it ends when opponents learn enough about each other” (Blainey, 1973; Gilpin, 1981). Generally, the winner of the conflict would be perceived as relatively stronger in the aftermath while the loser would be perceived as relatively weaker. Herschleifer (1991: 197) finds that “in many though not all conflictual contexts, the relatively less well-endowed side improves its position compared with its better- endowed rival.” More broadly, weaker states can benefit from initiating conflict with stronger states under certain circumstances (Slantchev, 2003: 622). If the weaker side emerges victorious, we assume that other system members would adjust their perceptions of its relative power. For example, Russia’s loss to Japan in the Russo-Japanese War generated a profound shift in perceptions of Russia’s military power. German leaders, who had been stressing Russia’s strength in internal reports prior to the end of the conflict, became “uniformly dismissive for Russia power” after its defeat at the hands of the Japanese, with newly-appointed Secretary of State Alfred von Kiderlen-Wachter asserting that “Russia knows that she stands no chance in war against us” (Ropponen, 1976: 122).

While decision-makers were previously able to ignore discrepant information or minimize changes from an initial image, major crises force decision-makers to form new anchors and estimations of power. Of all the traumatic events that can befall a country and its leadership, large-scale war is most likely to cause leaders to engage in a total reassessment of national power. The occurrence of a war not only breaks the lasting influence of prior beliefs of power and security, but the outcome also affects the new

perceptions that replace them, the new anchor that is set afterwards. Whether intentionally shared or not, an important aspect of military conflict is the exchange of information about disputants. Additionally, we argue that the outcome of the war biases how other states perceive each disputant's power status for an extended period of time once the conflict has concluded.

### **Good News and Bad News**

“We rapidly, if not effortlessly, adjust to good fortune and any improvement in our lives...neither individuals nor nations are so accepting of losses, however. We remain unhappy, unreconciled, and often bitter for a prolonged period” (Jervis, 1992: 200)

We know that people are more willing to accept information that confirms their existing beliefs and will discredit or discard information that would require further adjustment. Here we also assume that people will on average have more positive existing beliefs about themselves and will therefore be more willing to accept good news that confirms those positive beliefs than bad news that would require a downward adjustment in their self-assessment. Cognitive consistency contributes to this effect through a desire to “reflect the hypothesis that the reality would be positive” (Peeters, 2006: 461). In terms of power assessment, leaders may be more willing to accept information indicating an improvement in relative power, but less willing to adapt to data that suggests relative decline. Assuming that leaders have a pre-existing belief about their status, good news would confirm or improve that status, while bad news would indicate a lower status.

Both cognitive psychologists and neuroscientists have explored the differences in how people process good news and bad news as part of a growing research program on

prospect theory. This research has found that even if the news is objectively the same, portraying it positively – good news – or negatively – bad news – makes a difference in how people make decisions. In its most simplistic understanding, framing is “the process through which individuals or groups make sense of their external environment. Packets of incoming information pass through various cognitive, affective, and/or social filters to produce a ‘perception’ of the outside world” (Boettcher, 2004: 333). Information presented and perceived in a positive manner is processed differently than information that is presented and perceived in a negative manner. This difference leads to distinct judgments and behavioral responses. The good news is processed as a gain, while the bad news is processed as a loss. When graphing value functions of these changes, the result is “concave within the domain of gains and convex within the domain of losses...it demonstrates that the value function is significantly steeper with regard to losses than to gains” (Nincic, 1997: 98). For state leaders, one “unit” of relative decline will hurt more than one unit of relative growth. The loss they experience from the bad news will hurt, an experience they will avoid if possible by relying on information that instead confirms the pre-existing beliefs, the good news.

Some existing work in international relations combines power relations with the concept of framing. Berejikian (1997) incorporates power into his explanation of trade policy within the European Community. Jack Levy (1992: 286) explains the consequences of a positive or negative frame in context of state power: “A state which perceives itself to be in a deteriorating situation might be willing to take excessively risky actions in order to maintain the status quo against further deterioration.” This behavior indicates a lack of acceptance of the negative news and an extreme willingness to

disprove or change the assessment, even by making risky choices. In terms of power calculations, this translates to a leader's reluctance to accept a lower power status even to the point of discrediting accurate information.

Most importantly for this analysis, the concept of framing has been used to explain the way that individuals adjust to incoming positive and negative information. Individuals are said to begin at a reference point, which “may serve as a perceptual ‘anchor’; new information is then adjusted in relationship to the anchor” (Stein, 1993: 216). This new information requires adjustments to the reference point on the part of the individual, a process known as renormalization. When comparing positive news and negative news, research finds that “Outcomes that fall below the reference point may be discounted, whereas outcomes above the reference point may be overvalued” (Boettcher, 2004: 333). Because adjustment is quicker and easier for gains than losses (Jervis, 1992; Stein, 1993), a state leader faced with estimates of a reduction in relative power compared to last year's reference point may further discount the new information. Conversely, a leader presented with an assessment of growth over the previous year would overweight it in future estimates.

In the following section, we present a formalized method for transforming raw capability scores into Perception of Power (PoP) scores that is based on insight from multiple disciplines regarding the way in which individuals perceive the world around them. We identify four elements that drive the transformation process: reassessment in the aftermath of crisis, the anchoring effect of that reassessment, the maintenance of cognitive consistency, and the influence of framing on adjustments.

## BUILDING THE PoP MODEL

Given the theoretical foundations outlined above, we now turn our attention to the construction of a “Perceptions of Power” model. The scope and data used in this analysis are artifacts of our decision to focus on perceptions in pre-World War One Germany. The PoP model can be directly applied in a new context should other research be directed toward a different temporal range or competitive system, or if a different measure of power is used. The method for transforming raw power data into PoP scores, however, would remain identical to that outlined below.

### **Scope**

The temporal range of this analysis is 1871 to 1914. There are three primary reasons that this time period was chosen as an initial test of the Perceptions of Power model: First, the time span is commonly understood as a distinct era in modern European relations, beginning with German unification and the Franco-Prussian War and ending with the onset of World War One. Second, the period in question is not only distinct, it is also undeniably important because it culminates in a war of unprecedented size and consequence. As a result, there is a large amount of existing research that addresses both the relative power dynamics and the perceptions of key leaders of the time. The third reason that we select the 1871-1914 period is related to the way in which the concept of “power” is operationalized in this paper. We rely on the Correlates of War Project’s Composite Indicator of National Capabilities (CINC), which is comprised of variables such as total population, iron and steel production, and military personnel. While these

factors may be relatively uncorrelated with what is perceived as power in the current international system, the technological and military imperatives of the 1871-1914 era likely mean that the CINC data more closely resemble the types of measures that leaders would focus on when estimating the distribution of power.

Within the 44-year range covered in this analysis, we define a competitive system by considering Germany's primary European competitors during the 1871-1914 period. More specifically, we include European states that are defined by the Correlates of War Project as major powers for at least half of the years covered in the analysis (Singer and Small, 1982). These two criteria generate a six-state system that, in addition to Germany itself, includes Great Britain, France, Austria-Hungary, Italy, and Russia. While non-European major powers like the United States and minor European powers like Belgium were surely subject to power assessment by German leaders, the six-state system defined here includes Germany's chief rivals and the primary belligerents at the outset of World War One. Our unit of analysis is the country-year, and our dataset includes 264 observations (44 for each of the six system members).

## **Data**

### *Relative Power*

There are obvious difficulties associated with an attempt to quantify "power" in international relations or to separate power from other concepts like influence and role. (Deutsch, 1959; Doran and Parsons, 1980; Sweeney, 1999; Tellis et al., 2000). We simultaneously acknowledge and sidestep this debate because our focus here is not on the most appropriate method for the operationalization or measurement of power. Instead,

our goal is to develop a better way to account for the way in which national leaders perceive their own relative power and that of other states that they compete against. In other words, we are less interested in the external validity of our power measure than we are the way in which raw relative power scores are effectively transformed in order to account for leadership perceptions. In fact, the PoP model is presented as a tool that can be used by scholars regardless of the earlier decisions that they have made about the conceptualization, operationalization, and measurement of relative power.

As mentioned in the previous section, this analysis relies upon a definition of power that is based on material capabilities that are particularly relevant to the time period we address. We use annual observations from the Correlates of War Project's Composite Indicator of National Material Capabilities (CINC) dataset. Because the focus here is on the relationship between the material capabilities of each of the actors in a competitive system, the raw CINC scores are translated into a relative CINC score by determining each state's system share for every one of the six variables included in the CINC dataset. The system shares for the six variables are averaged, giving equal weight to each type of capability. The average system share translates into an overall relative capability score that can be assigned annually to each system member. Table 1 includes high, low, and average national capability scores for each country in this analysis between the years of 1871 and 1914.

[INSERT TABLE 1 ABOUT HERE]



### *Regime Transitions*

In addition to annual relative capability data for system members, the dataset also includes information about domestic political regimes, their durability, and points of significant regime transition. We treat regime transition as an important form of internal change that is likely to cause leaders from other states to engage in a reassessment of the transitioning country's material capabilities. Following the coding rules established by the Polity IV Project, we define regime transition as a substantive change from one regime to another (Marshall et al., 2010). Drastic forms of transition can occur if the state disintegrates, there is a collapse of state authority, a new state is created, or if the state is transformed territorially. More common forms of regime transition occur when there is an abrupt and significant move toward democracy or autocracy within the state.

The Polity data rank countries annually with scores from "10" to "-10," with a high score representing the deepest, most stable form of democracy and a low score representing entrenched autocracy. According to the Polity IV coding mechanism, a substantive regime transition is defined by a score change of three or more from one year to another. In this analysis, countries are said to experience internal change during the year of regime transition, and this provokes a new assessment of their relative capabilities in the following year. Table 2 lists the internal changes that occur for the countries covered in this study between the years 1871 and 1914.

[INSERT TABLE 2 ABOUT HERE]

Note that there are no examples of state collapse or the kind of major territorial alterations for system members during this time period. The regime transitions included in this analysis represent the emergence of new political institutions, radical electoral reversals, limited revolutions, and the ascension of new autocratic leaders. While these events fall short of the more drastic forms of regime transition, the Polity IV Project treats them as significant indicators of internal change with the affected countries and, based on our theoretical assumptions, they are likely to generate new assessments by other states in the competitive system.

### *Interstate Conflict*

Perceptions of a state's capabilities will also be heavily influenced by its performance in confrontations with other actors in the international system. During and after their involvement in high level militarized interstate disputes (MIDs), states will be scrutinized by an audience that includes both the countries that they are in conflict with, as well as other powers that are not involved in the dispute. The increased level of attention is likely to generate a reassessment of that country's relative power, with leaders addressing new capability data with a more open mind than they would during more typical years. States are also likely to reassess their own capabilities in the aftermath of high intensity conflicts. If, as Geoffrey Blainey (1973: 246) argues, "wars are essentially disagreements about power," then the outcomes of conflicts are likely to offer good information about the relative capabilities of the belligerents.

The clearest information about the relative power of belligerents will be derived from the biggest wars. Significant reassessments are much more likely to occur when

major powers clash with other strong states or when the severity of the conflict is high enough to suggest that one or both sides is devoting a significant portion of its military assets to the war fighting effort. In this analysis, we focus on militarized clashes that escalated to the point of war, and which either involved another major power, led to more than 5,000 battlefield deaths for the state in question, or both. Leaders are apt to reassess their own country's military capabilities, however, even after less intense conflicts. We assume "self-reassessment" in any instance when a country engages in a militarized dispute that includes the use of armed force by themselves and another state. There is no battlefield death threshold and no major power competitor required for self-reassessment. These criteria are used to construct Table 3, which highlights three militarized disputes that led German leaders to reassess the military capabilities of another member of the European major power system and four conflicts that led to self-reassessment.

[INSERT TABLE 3 ABOUT HERE]

### **Method of Transformation**

After identifying the temporal scope, competitive system, and relevant variables, we transform relative capability scores into Perception of Power scores using the process outlined in the following section. Our method of transformation is based on four principles. First is the principle of reassessment after crisis, which refers to the way in which internal regime change or external conflicts cause leaders to engage in a total reassessment of the country experiencing the crisis. The second principle is the anchoring effect, which is epitomized by the search for cognitive consistency and the tendency of

perceptions to only change slowly after an initial anchoring perception is developed. Third is framing and adjustment, which refers to the different way in which leaders perceive and adjust to new information that represents relative gains compared to the way in which they adjust to information that signals relative decline. Also, adjustment occurs more frequently and significantly with respect to self-assessment than it does in assessment of others. The fourth and final principle is that of deflationary shock. Closely related to the idea of reassessment after crisis but reserved for very particular circumstances, deflationary shocks refer to the sudden and negative changes in the perceived power of countries that have suffered an unexpected loss in war against a weaker military power.

The four principles described above are used to transform raw capability scores into PoP scores, with specific elements being applied during in certain situations. In this analysis, our interest is in German perceptions of power between 1871 and 1914. Based on that perspective, each country-year can be placed in one of four categories: reassessment after crisis, adjustment to relative gains (from a German perspective), adjustment to relative losses (from a German perspective), and deflationary shock. In most years, PoP scores are calculated by using the “framing and adjustment” transformation method. This method varies slightly to account for different rates of adjustment to relative gains for Germany, relative losses for Germany, as well as relative gains and losses for other states. For countries (including Germany) that experience significant regime transitions or interstate conflicts, the PoP score for the year following the transition or conflict is calculated using a “reassessment” transformation method that allows for new capability information to completely replace old perceptions. A

“deflationary shock” method is used in years after any country (including Germany) suffers defeat in war against an enemy with inferior military capabilities.

### **The Framing and Adjustment Method**

For years that do not involve reassessment or deflationary shock, we assume that perceptual adjustments for German leaders will occur incrementally. New capability information interacts with previous perceptions of power in order to generate a current PoP score each year. In general form, the framing and adjustment method generates PoP scores in the following manner:

$$\{\text{Eq. 1}\}: (\text{CINC}_{\text{GMY}_t}) \geq (\text{PoP}_{\text{GMY}_{t-1}}) \Rightarrow \text{PoP}_{\text{GMY}_t} = \beta_1 (\text{PoP}_{\text{GMY}_{t-1}}) + \beta_2 (\text{CINC}_{\text{GMY}_t}),$$

Where  $\text{PoP}_{\text{GMY}_t}$  indicates the PoP score of Germany in the current year,  $\text{PoP}_{\text{GMY}_{t-1}}$  represents last year’s PoP score for Germany,  $\text{CINC}_{\text{GMY}_t}$  is the current year’s relative power score generated by the CINC data, and  $\beta_1$  and  $\beta_2$  are coefficients that weigh current information and past perceptions as a fraction such that the sum of the two coefficients equals one. As mentioned, the rate at which new information is absorbed depends on whether the information represents a relative gain or a relative loss for German leaders. When considering their own country’s relative capability, German leaders will adjust to relative gains more quickly than they adjust to relative losses. When considering the relative capabilities of other states, we assume that German leaders will adjust more quickly to losses for those states than gains for those states. More broadly, we incorporate existing research that suggests that perceptions of self will adjust more

rapidly than perceptions of others. In general then, we assert that the highest rate of adjustment will occur in light of German gains and the lowest rate of adjustment will occur in light of gains for other states. We assume that adjustment will occur at a “medium” rate in light of losses for Germany and other states. Although this order of adjustment rates is well supported by the existing literature, there is far less guidance available for establishing the specific numerical rate at which new information is absorbed. As a starting point, we use a point from Lopes (1985: 510), who describes the adjustment process as “qualitatively equivalent to averaging.”

Taking this point quite literally, we incorporate the concept of “averaging” into the PoP model by assuming that information suggesting relative gains will be weighted equally against existing perceptions. In other words, new information indicating relative capability growth for Germany contributes to 50% of Germany’s PoP score for that year. The previous year’s PoP score also contributes 50% to the current year’s PoP score. This can be represented in the following manner:

$$\{\text{Eq. 2}\}: (\text{CINCGMY}_t) \geq (\text{PoPGMY}_{t-1}) \Rightarrow \text{PoPGMY}_t = 0.5 (\text{PoPGMY}_{t-1}) + 0.5 (\text{CINCGMY}_t)$$

New information that represents relative decline for Germany, however, will be heavily discounted in the face of existing perceptions. Although there is necessarily some subjectivity involved in determining any discount rate, our standard model assumes that German leaders adapt to relative gains five times faster than they adapt to relative losses: new capability information indicating relative decline for Germany contributes 10% to the current year’s PoP score for Germany, while the previous year’s PoP score

contributes 90% to the new PoP score. This results in the following equation, which can be used to generate German PoP scores in years of relative decline:

$$\{\text{Eq. 3}\}: (\text{CINCGMY}_t) < (\text{PoPGMY}_{t-1}) \Rightarrow \text{PoPGMY}_t = 0.9 (\text{PoPGMY}_{t-1}) + 0.1 (\text{CINCGMY}_t)$$

The same logic is inverted when determining the way in which German leaders adjust to changes in the relative power of other system members. New capability information that indicates relative gains for other states vis-à-vis Germany will be heavily discounted, while relative decline for other states will be adjusted to more quickly. In addition, we assume that German leaders will generally update their perceptions of other states at a significantly slower rate than they update perceptions of their own capabilities. We strive for logical consistency by assuming that German leaders will weight new information indicating relative decline for others at a rate five times greater than they will weight information indicating relative growth. At the same time, the overall rate of adjustment is much lower, with new information about relative losses contributing only 10% toward updated PoP scores and relative gains contributing a paltry 2% toward updated PoP scores. The processes for calculating new PoP scores for other states are presented in Equations 4 and 5.

$$\{\text{Eq. 4}\}: (\text{CINCOTH}_t) < (\text{PoPOTH}_{t-1}) \Rightarrow \text{PoPOTH}_t = 0.9 (\text{PoPOTH}_{t-1}) + 0.1 (\text{CINCOTH}_t)$$

$$\{\text{Eq. 5}\}: (\text{CINCOTH}_t) \geq (\text{PoPOTH}_{t-1}) \Rightarrow \text{PoPOTH}_t = 0.98 (\text{PoPOTH}_{t-1}) + 0.02 (\text{CINCOTH}_t)$$

Again, we note that there is an element of subjectivity that characterizes the specific weighting scheme we identify here. We have developed a set of sensitivity tests in order to address concerns that PoP scores will vary greatly depending on the numerical weights chosen. We present two of those sensitivity tests in the Appendix to this paper, and show that PoP scores are robust in the face of very distinct weighting schemes.

### *The Reassessment Method*

Reassessment occurs in the aftermath of significant internal or external change. We argue that, when a country experiences regime transition or a high-level interstate conflict, German leaders are likely to establish new perceptions of that country's material capabilities. Reassessment will involve a closer look at recent information regarding the country's economic, military, and demographic strength. German leaders will also reassess their own capabilities in the wake of regime change at home (they did so in 1871 after unification and in 1890 after the ascension of Wilhelm II). When it comes to interstate conflict, we assert that German leaders will be more sensitive to outcomes and that the threshold for internal reassessment is actually lower than it is for reassessment of other states.

Based on the definitions of regime transition and interstate conflict used in the analysis, reassessment events can be identified for each of the six system members. For German leaders, self-reassessment and reassessment of other states will take place in the year following regime transition or large-scale interstate conflict. In years when the reassessment method applies, the method of transformation is quite simple: existing German perceptions are simply replaced with the most recent capability data available. If



PoP scores typically change in gradual fashion over time, years of reassessment are meant to generate PoP scores that break sharply from the past. This is particularly the case when it comes to German leaders and their perceptions of other states: PoP scores of other states that reflect the simple framing and adjustments method will change very little over time. This contrasts with the abrupt change in perception that occurs when another system member experiences regime transition or interstate conflict.

One might note that the first year in our temporal range (1871) serves as a sort of artificial truncation point. The first observation serves a perceptual anchor and exerts heavy influence on later PoP scores because it serves as an initial baseline score from which subsequent scores must be adjusted. Considering that the rate of adjustment can be quite slow, particularly for non-German states that are experiencing relative growth, the 1871 score does exert a great deal of influence in the years that follow. In effect, the 1871 score for all countries is calculated according to the reassessment method outlined above. This would be the case, however, for whatever start date was chosen. Moreover, other years may not be as theoretically justifiable as a start date. This paper focuses on German perceptions, and 1871 represents the birth of modern Germany, as well as the end of the Franco-Prussian War. In many ways, 1871 does represent a legitimate point of origin for modern German perceptions.

### *The Deflationary Shock Method*

A very particular type of reassessment is likely to occur when a state loses a large-scale war against an opponent that has inferior military capabilities. Defeat at the hands of a weaker power in such a war is likely to change perceptions about the defeated

country's military efficacy. In the context of this analysis, this means that German leaders would immediately reduce their estimations of the defeated state's military power. We argue that, in such a case, German perceptions would be guided by new economic and demographic information in the same manner described above when discussing the reassessment method, but that estimations of the defeated state's military strength would be deflated in a very specific way because of the loss. This is particularly true because only very high-level conflicts are included in the dataset as points of reassessment.

For four years following what we call an "unexpected loss" at the hands of a weaker power, the defeated country's perceived military expenditure and personnel scores are determined by multiplying its actual, current scores by a fraction that is equal to the ratio of the weaker state's peak wartime military capability compared to that of the defeated (but stronger) state. Depending on the difference in military personnel and expenditure between the defeated and weaker but victorious states, this can have a profound short-term effect on the defeated state's overall PoP score. During the fifth and sixth year following war termination, more weight is shifted to the defeated state's actual military capabilities and the mathematical influence exerted by the military data from the weaker state is phased out. In the fifth year following war termination, the formula described above determines  $5/6$  of the defeated state's military capability, and the remaining  $1/6$  is determined by the defeated state's actual military data from that year. In the following year, there is an even balance between the influence exerted by the formula and that of the actual military data. Seven years after the military loss, perceptions of the defeated state's capabilities are once again guided purely by information about that

state's economic, demographic, and military strength. The generic deflationary method is formalized in Equations 6 through 8:

$$\{\text{Eq. 6}\}: \text{UMD}_{t+1:t+4} \Rightarrow \text{PMCSDS} = [\text{MILEXPWVS}_{p_{wv}} / \text{MILEXPSDS}_{p_{wv}}][\text{MILEXPSDS}_t] + [\text{MILPERWVS}_{p_{wv}} / \text{MILPERSDS}_{p_{wv}}][\text{MILPERSDS}_t]$$

$$\{\text{Eq. 7}\}: \text{UMD}_{t+5} \Rightarrow \text{PMCSDS} = 5/6 [\text{MILEXPWVS}_{p_{wv}} / \text{MILEXPSDS}_{p_{wv}}][\text{MILEXPSDS}_t] + 1/6 [\text{MILEXPSDS}_t] + 5/6 [\text{MILPERWVS}_{p_{wv}} / \text{MILPERSDS}_{p_{wv}}][\text{MILPERSDS}_t] + 1/6 [\text{MILPERSDS}_t]$$

$$\{\text{Eq. 8}\}: \text{UMD}_{t+6} \Rightarrow \text{PMCSDS} = 3/6 [\text{MILEXPWVS}_{p_{wv}} / \text{MILEXPSDS}_{p_{wv}}][\text{MILEXPSDS}_t] + 3/6 [\text{MILEXPSDS}_t] + 3/6 [\text{MILPERWVS}_{p_{wv}} / \text{MILPERSDS}_{p_{wv}}][\text{MILPERSDS}_t] + 3/6 [\text{MILPERSDS}_t]$$

In these equations,  $\text{UMD}_{t+1:t+6}$  refers to the aftermath of an unexpected military defeat for the state in question. An unexpected defeat is defined by a loss in war that involves either another major power or more than 5,000 battlefield casualties for the state in question and by the fact that defeat for that state came at the hands of a state with inferior capabilities in terms of military expenditure and military personnel. In this scenario, PMCSDS refers to the perceived military capabilities of the stronger-but-defeated state,  $\text{MILEXPWVS}_{p_{wv}}$  and  $\text{MILEXPSDS}_{p_{wv}}$  refer to the peak wartime value of the both states' military expenditure, and  $\text{MILEXPSDS}_t$  refers to the stronger-but-defeated state's actual military

expenditure for the year in question. The same equivalency exists for references to the military personnel variable.

In the next section, we use the methods outlined above to estimate German perceptions of power in the European system between 1871 and 1914. These estimations serve as our “results” in this analysis. Most importantly, we highlight differences between raw capability scores and the PoP scores we generate in order to show how the PoP model is more accurate in tracking the actual perceptions of German leaders at the time.

## DISCUSSION OF RESULTS: THE PERCEPTION OF POWER MODEL AND GERMANY’S PERCEPTIONS BEFORE WORLD WAR ONE

### **Validity of the Model**

Does the perceptual model of national power better reflect German leaders’ actual perceptions than other measures of material capabilities? In order to judge the face validity of the PoP model, we conducted a systematic examination of German diplomatic documents during the pre-War period from 1871-1914. The principle source was Captain Edgar Dugdale’s four-volume *German Diplomatic Documents from 1871-1914* (1931), which is a collection of chosen translations from the original *Grosse Politik der Europäischen Mächte* (1927). We assembled a dataset that contains all written references to power, including mentions of national capabilities, projected war results, European hierarchies of power, and material resources, in order to get a sense for German leaders’ perceptions.

We recognize that this endeavor is not without difficulty - some statements are vaguely or only tangentially related to power, while others only offer a muddled picture of German views. Further, our goal is not to replace historians’ exhaustive and fine-

grained analyses, but to systematically gather empirical data over a limited set of documents in order to judge the perceptual model's theoretical contribution. However, Dugdale's four volume set is perhaps the single best primary resource for diplomatic documents, reflecting the personal views of leading governmental officials and diplomats. The documents include the views of the most important decision makers and foreign policy advisors, including Count Metternich, the Chancellor Bethmann-Hollweg, Emperor Wilhelm I, Chancellor von Bülow, and Baron von Marschall. These documents are almost entirely private correspondence between individuals or with the German Foreign Office. Private correspondence is perhaps relatively more valuable than public speeches or similar sources. In order to better systematize our judgments, all three authors coded one volume in order to ensure coding consistency.

We recognize that perceptions of power break down in the immediate run-up to war as elite decision makers begin discussing intentions more frequently than capabilities. This does not present a problem, as our model attempts to capture the conceptual divide between macro-level theories of hegemonic transition and micro-level crisis management studies. Minute conflict management processes and perceptions during the immediate run-up to war are outside of this model's explanatory domain. As Count Metternich argues during war planning shortly before the outbreak of war, "This gossip about war and danger of war seems to have caused minds which were already excited to lose all sense of proportion" (Dugdale vol. 4, 1931).

### **Basic Trends**

At first inspection, the perceptions of power model seems to capture general German perceptions before World War One quite accurately. The perception of power

model should reflect two essential trends: the German understanding of the hierarchy of states in the system at any specific point in time and basic dynamics of growth and decline. Germany and Great Britain are mirror images of one another in terms of growth and decline, with Britain losing approximately a 10% share of the system's total power and Germany gaining approximately an 18% share between 1870 and 1914. Though the system in question is all pre-World War One European great powers, the PoP model preserves the division of Italy and Austria-Hungry from the other four powers. These bottom two only comprise a 13% share of the system power together, with stagnant growth throughout the period. Russia's growth throughout the period is defined by two distinct peaks and subsequent troughs - by far the most sudden and dynamic changes within the period for this system. For instance, the Russo-Japanese War causes German estimates of Russian power to jump from a 20% share to a 30% share of the systemic total, while its defeat is exaggerated with an almost 15% share loss. France's share of systemic power is fairly constant throughout the period and concentrated around a 15% share, though France begins a gradual decline around the turn of the century.

We find that documentary evidence of German perceptions (often seen in estimates of various German war alliance contingency plans) aligns with the perceptual model's hierarchy of European powers quite closely. For instance, German leaders discuss that "In our estimate of the fighting forces, a simultaneous struggle of the German and Austrian Empires against France and Russia would be a difficult and indeed an unequal one..." (Dugdale vol. 1, 1931: 282). The perceptions model shows that a steadily ascendent Germany, coupled with second-tier Austria-Hungry in late 1886, is still not strong enough to confront a potential Franco-Russian alliance. For any model of relative

power to be valid, it must reflect Great Britain's relative dominance over the other European powers during the pre-war period. This sentiment is pervasive in the German diplomatic literature, with other German leaders positing in 1883 that "England does not need an alliance with a European Power..." to protect its power in a potential conflict (Dugdale vol. 1, 1931: 167).

The perceptual model captures many of the general growth dynamics of the European great powers. For instance, both the Correlates of War CINC data and the perceptual model have Germany and Russia in approximate parity during the mid 1880s, which is reflected in the German documents. One leader argues that "The Emperor is peaceable by nature, and no Russian Emperor...would let loose a war with Germany, for even victory would hold out no prize to Russia, whereas ill-success would endanger the dynasty" (Dugdale vol. 1, 1931: 314).

Germany's growth relative to France in the late 1870s is well supported, as "No single statesman in France believed in the possibility of a successful war against Germany. According to reports...the Army was in a very bad condition, far worse than before the War, both as regards discipline and also the quality of the men themselves...For the next ten years an attack by France was only imaginable" (Dugdale vol. 1, 1931: 4).

Both the PoP and COW CINC models display gradual British relative decline which becomes acute during the early 1900s, following Britain's experience in the Boer War . Baron Spect von Sternberg's recollection of President Theodore Roosevelt's comment about British power is particularly telling: "It appears to me...that the British

are no longer the nation they were. They have lost much of the old manliness, self confidence and freedom from nerves” (Dugdale vol. 3, 1931: 218).

### **Two Major Discrepancies**

Yet these general impressions of the balance of power in pre-World War One Europe are not enough evidence to completely prove the utility and validity of the perceptual model. These broad observations are shared by the COW CINC dataset and therefore cannot alone distinguish the perceptions model. To more rigorously test the perceptions model, we will highlight three points where the perceptions and CINC datasets differ. First, the perceptions model indicates a later date of British-German parity and transition than does the CINC model by approximately seven to eight years. Second, while both models capture the spike in Russia’s power in approximately 1904 due to the Russo-Japanese War, only the PoP model notes a sharp, geometric resurgence of perceived Russian power from 1911 to 1912. We then compared evidence for either model using the German documents at these points of contention.

Between 1904 and 1913, we collected 52 instances of German leaders commenting on British power directly, of which 41 support the perceptual model and seven are ambiguous. We also collected 18 instances of German references to Russian power, of which 13 supported and three were ambiguous. Some quotes make implicit references to power relations, but are too vague to be definitively coded. For instance, the statement “Lord Salisbury then argued that Russia was now unable to undertake any great political enterprise abroad” (Dugdale vol 3, 1931: 98) might reference Russian relative decline or simply an unwillingness to go abroad due to domestic constraints, so it is counted as “ambiguous.” Similarly, the quote “He also recognized the indications that



Russia is seeking an opportunity of regaining the ground she has lost in the East, and of strengthening and extending it” references, but does not give a definitive assessment of potential Russian power (Dugdale vol. 1, 1931: 249). In contrast, the statement “These two powers [Russia and Britain] cannot deal each other mortal blows. They can hinder each other’s schemes and prevent the carrying out of particular objects, but not kill each other” is supportive of German perception of Russian-British parity.

We find ample support in the German historical documents for the perceptual model’s later date of parity between Germany and the United Kingdom. Based on CINC scores, we would expect ascendent Germany to surpass Great Britain in approximately 1903-1904, yet it is clear that German leaders do not believe that their own power even begins to rival that of the United Kingdom until 1912. For instance, Count von Bülow posits British superiority in late 1904, arguing that “England was so much superior to us at sea that the possibility of a German attack on England was not to be mentioned by thinking people” (Dugdale vol. 3, 1931: 213). German leaders certainly are aware of British decline, yet know that British superiority in 1904 deterred any potential conflict. This sentiment is exemplified by Count Berstorff’s argument that

“If then we have to fight England for the sake of our power and expansion, every hour by which the struggle is postponed is a gain for us. The might of the German people is continually increasing, whilst no one can live with his eyes open amongst the island people (British) without realizing that they have already reached their highest point” (Dugdale vol. 3, 1931: 191-2).

If the two states had already reached parity 1904, we would expect to find far more aggressive calls for conflict.

German leaders maintain this point of view throughout the period from 1904-1911. In 1908, “Ballin is convinced that it is to Germany’s interests to avoid a clash with England during the next few years naturally whilst maintaining our dignity to the full, not only because time is on our side for increasing our population, strengthening our forces, and for the hoped-for improvement of our finances...” (Dugdale Vol. 3, 1931: 283).

Bülow argues further in 1908 that

“The measure of our financial strength prevents our shipbuilding being extensive enough to mean a danger of aggression not imaginary, but really fatal, for England. We cannot have a great army and a great navy at the same time. We certainly cannot compete in Dreadnoughts with England wither her much greater wealth. The difference between us and England in fighting ships will remain about the same for a long time” (Dugdale vol. 3, 1931: 283).

In discussions of relative naval strengths, Baron von Bussche-Haddenhausen notes that “On economic ground, moreover, and quite apart form the fact that our fleet will never be strong enough to crush the British, we have every economic reason for coming to an understanding with Britain” as late as 1909 (Dugdale vol. 3, 1931: 344). German leaders believed that even with their rapid rate of growth, British superiority, and their commitment to maintain their power advantage, would prevent parity in the near future. As one German leader writes, “But you do not discuss whether, in consideration of the then great superiority of the British sea forces over ours...a superiority, moreover, which the British people appear determined to maintain in all future circumstances” (Dugdale vol 3, 1931: 332). It is clear that while the CINC data predicts parity at approximately 1904, German perceptions differed - parity would not come until later.

German assessments of their relative power vis-a-vis the United Kingdom begin to become muddled in 1911 and 1912, indicating that some leaders began to believe that

Germany rivaled Britain. For instance, Kühlman's early 1912 letter expresses these mixed feelings, "...unless England shows accommodation to Germany and allows the strongest Power on the Continent the greatest possible elbow-room in colonial matters (Emperor: '*No! We have colonies enough. If I want them, I buy them or take them without England!*')" (Dugdale, vol. 4: 1931). The emperor's comments on the letter make it clear that Germany will not accept handouts, but is prepared to take what it wants by force, if necessary.

The Perceptions of Power model further captures the great fluidity of opinion regarding German perceptions of Russia between the Russo-Japanese War and World War One. Both the CINC and perceptions models capture the great spike in Russian power due to mobilization for the Russo-Japanese War, yet only the perceptual model tracks an exaggerated trough after Russia's defeat, then subsequent and dramatic rise in 1910-1911. This rapid, geometric recovery - akin to Organski and Kugler's phoenix effect - is in direct opposition to the CINC data (1977). Wohlforth was first to key in on this difference, which we now can model quantitatively: "Any quantitative test of a dynamic theory, or any causal analysis of numerical indicators of power, will therefore miss an important dynamic element: the perceived rapid decline and rise of Russia" (1987: 375).

The documentary evidence greatly supports this view, as German leaders quickly began to fear future Russian expansion and latent power potential in 1912 (Fischer, 1975). Lynn-Jones presents the "preventive war" thesis for World War One: "Many historians now agree that Germany was willing to risk war in 1914 because elements of the German elite, especially the army, feared that German power was declining vis-a-vis

Russia and the opportunity for expansion was slipping away” (1986). Wohlforth quotes Secretary of State Jagow’s conversation with Moltke in 1914: “The prospects for the future weighed heavily upon him. In two or three years Russia would have finished arming. Our enemies’ military power would be so great that he did not know how he could deal with it. Now we were still more or less a match for it. In his view there was no alternative but to fight a preventive war so as to beat the enemy while we could still emerge fairly well from the struggle” (1987). Further, in 1914 Bethman-Hollweg argues that “the secret intelligence gives a shattering picture...The military might of Russia is growing fast...The future belongs to Russia, which is growing and growing and is becoming an ever increasing nightmare to us” (Wohlforth, 1987; Berghahn, 1973).

#### CONCLUSION AND NEW DIRECTIONS FOR THE PoP MODEL

The data, methods, and tests outlined in this paper are meant to demonstrate the relative efficacy of the PoP model in tracking German perceptions of relative power trends in the years before World War One. In particular, the PoP model provides new insight about the year in which German leaders perceived that their country had achieved parity with Great Britain, and also the way in which German leaders perceived Russia’s recovery and rapid ascent in the aftermath of its loss in the Russo-Japanese War. In both cases, the power levels and trends identified by the PoP model are significantly different than those indicated by using raw relative power data, and are also validated by extensive evidence from the diplomatic record of the time.

Despite our focus on major powers in Europe during the 1871 to 1914 time period, the PoP model is designed for versatility and application in various settings. The spirit of the model is the process by which raw power scores are transformed in “Perception of Power” scores. As a result, the model can be used in any analysis that addresses the way in which ideas about relative power influence behavior of actors in a competitive system, regardless of the nature of the system in question, the way in which power is operationalized and measured, or the temporal range of the study.

Within the field of international relations alone, we see the PoP model as a tool that can be applied effectively to research in multiple areas, including power transition theory and conflict management and resolution. Power transition studies assume that state leaders are privy to objective perceptions of the date of power parity between challenger and hegemon, yet accounting for subjective perceptions of the timing of parity might change the relationship between the balance of power and conflict (Organski and Kugler, 1979; Houweling and Siccama, 1988; Kim, 1989, 1992; Soysa, O’Neal, Park, 1997). Our study demonstrates this potential by supporting a later date of parity between Germany and the United Kingdom, one that better explains the outbreak of World War One. Similarly, the PoP model may also offer improved understanding of how power disparity affects international conflict negotiation outcomes. Both practitioners and scholars of conflict resolution recognize the implications that subjectivity has on negotiation outcomes (Fisher and Ury, 2011; Zartman, 2000; Kleiboer, 1994). Bercovitch and Jackson (2009: 21) write of bargaining and negotiation as a “conflict resolution mechanism anchored in the perception of those involved”, even suggesting techniques for managing or manipulating that perception. Other trends observed include an escalating

commitment to a prior course of action, an assumption of fixed options causing missed opportunities, a devaluation of any concessions achieved, and a viewpoint affected by anchors (Malhotra and Bazerman, 2008). The incorporation of cognitive psychology, already used informally by practitioners, into more systematic models could inform policymakers and potential mediators regarding the likelihood of successful resolution.

The essence of the “Perceptions of Power” model is the idea that foreign policy strategies originate from a subjective awareness of relative growth trends and power balances. The impetus for this project comes from Wohlforth’s (1987) assertion that “If power influences international relations, it must do so through the perceptions of those who act on behalf of states.” While the majority of modern international relations theories that use power as an independent variable theorize in terms of leaders’ perceptions as an intervening variable, they fail to operationalize actual perceptions of power. This study makes significant progress towards correcting this shortcoming.

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TABLES AND FIGURES

Figure 1: Standard PoP Scores: Six European Powers, 1871-1914

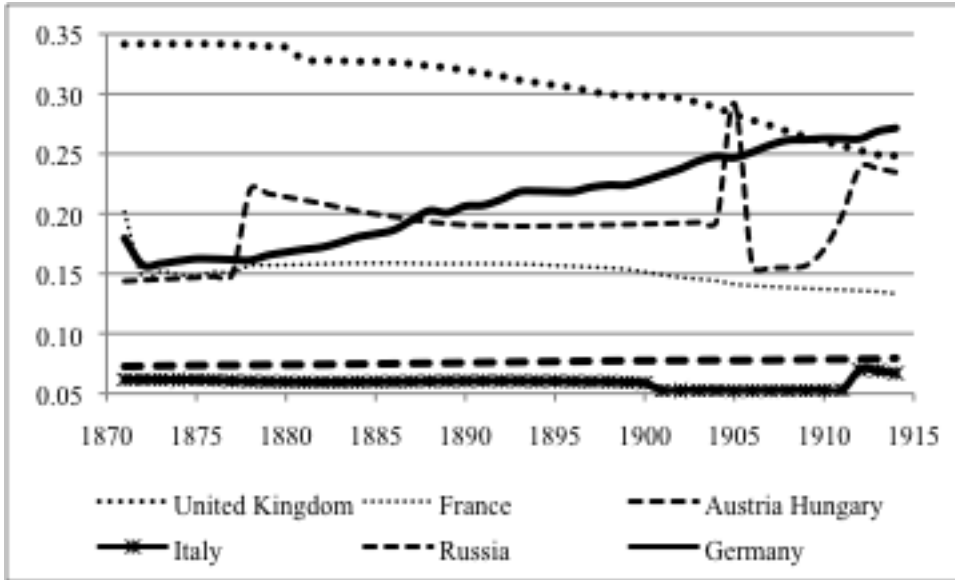


Figure 2: Raw Relative Power Scores for Six European Powers, 1871-1914

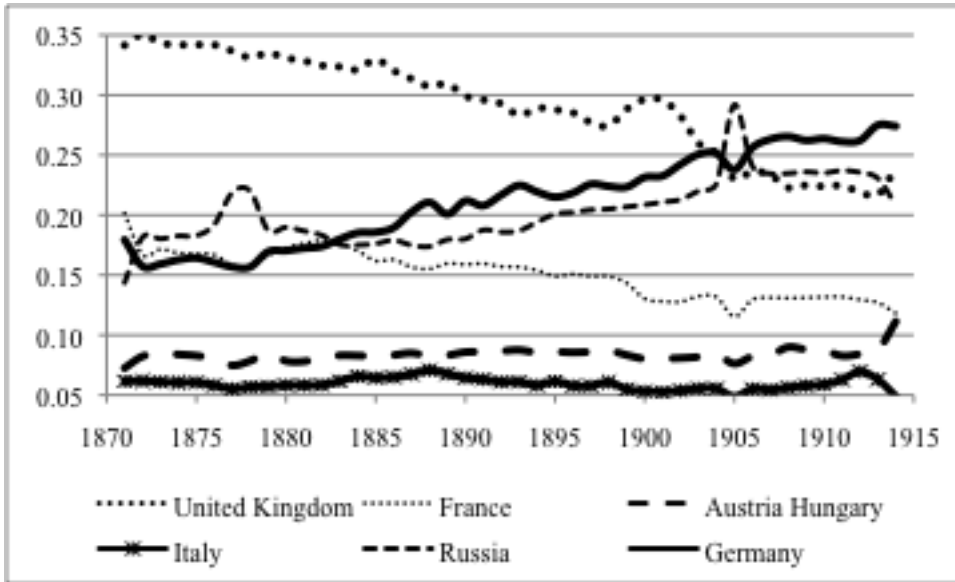


Figure 3: Comparing German Standard PoP and Raw Relative Power Scores

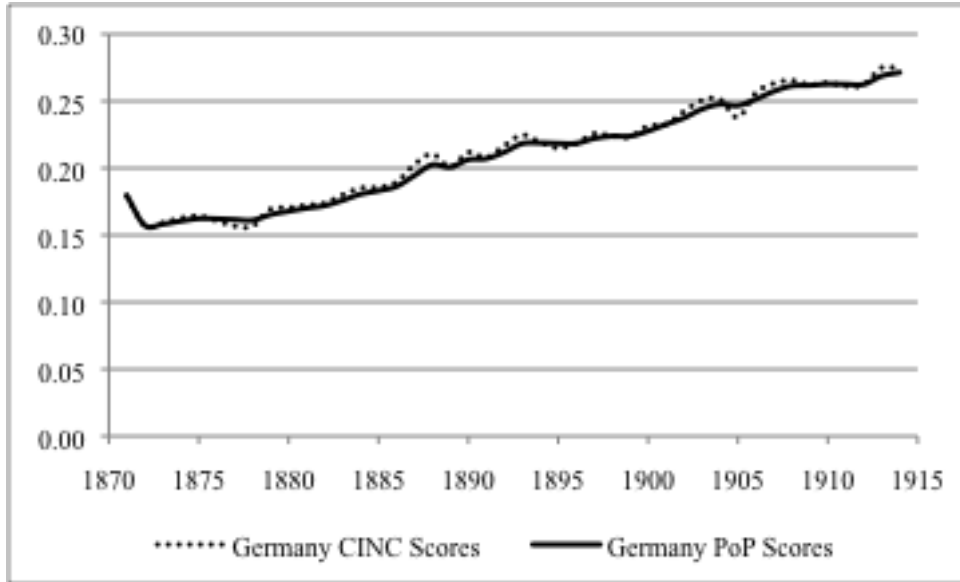


Figure 4: Comparing Russian Standard PoP Scores and Raw Relative Power Scores

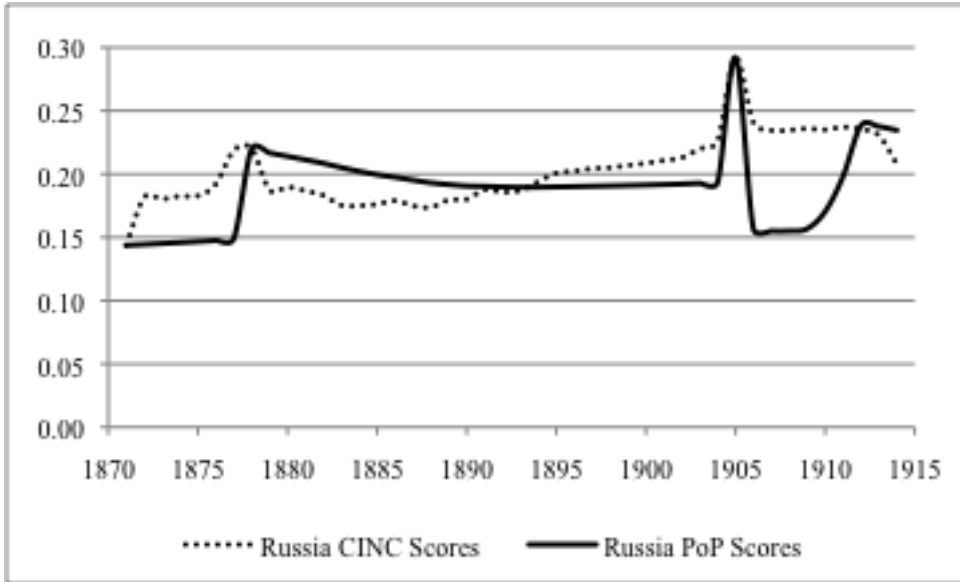


Figure 5: Standard PoP Scores for Germany, United Kingdom and Russia Only

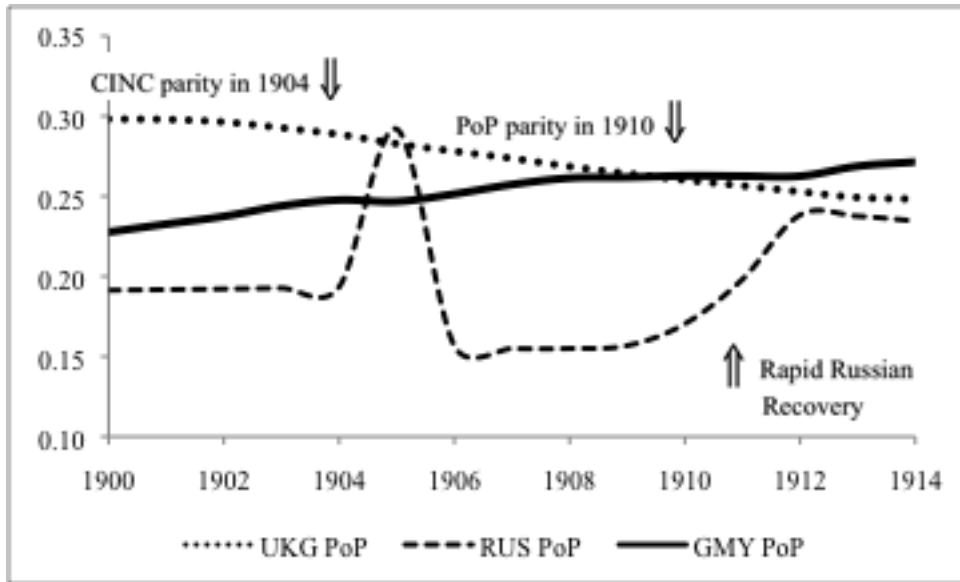


Table 1: Relative Power Scores (by percent) for Six Major European Powers: 1871-1914

Country	Average CINC Score	High CINC Score (Year)	Low CINC Score (Year)
Germany	21.47	27.64 (1913)	15.53 (1877)
United Kingdom	30.70	38.40 (1876)	21.75 (1913)
France	15.52	20.91 (1871)	12.99 (1914)
Austria-Hungary	7.91	11.86 (1914)	6.47 (1871)
Italy	5.63	7.00 (1888)	4.45 (1914)
Russia	18.78	30.62 (1905)	12.23 (1871)



Table 2: Regime Transitions in Six Major European Powers: 1871-1914

Country	Year(s)	Description
Germany	1871	Unification, democratization (-7 to -4 Polity score increase)
Germany	1890	Ascension of Wilhelm II, democratization (-4 to 1 Polity score increase)
United Kingdom	1880	Gladstone/Liberal electoral victory, foreign policy retrenchment (4 to 7 Polity score increase)
France	1877	Constitutional crisis, parliamentary triumph (-6 to 7 Polity score increase)
Italy	1900	Electoral reform, democratization (1 to 4 Polity score increase)
Russia	1905	1905 Revolution, Russian Duma, expanded suffrage (-10 to -6 Polity score increase)

Table 3: Interstate Conflict and Capability Reassessment: Of Germany and Others

Country	Year(s)	Conflict (Type and Severity)
France	1872	Franco-Prussian War (Major Power War; 152,000 deaths)
Russia	1879	Russo-Turkish War (120,000 deaths)
Russia	1906	Russo-Japanese War (71,453 deaths)
Germany	1872	Franco-Prussian War (Major Power War; 44,781 deaths)
Germany	1890	Samoan Crisis (Naval Clash versus the USA and UKG)
Germany	1898	Occupation of Tsingtao (Clash and occupation versus Chinese forces)
Germany	1900	Boxer Rebellion (Clashes versus Boxer rebels in China)