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Rebel Leader Age and the Outcomes of Civil Wars

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Abstract

What determines the outcomes of civil wars? Existing literature highlights numerous factors at the systemic, state, and organizational levels of analysis. Yet there is little research on the attributes of rebel leaders in shaping war outcomes despite ample theories of their importance in steering their organizations. This article focuses on rebel leaders' age as one key driver of their behavior. Applying insights from developmental psychology to the context of armed rebellion, we argue that young rebel leaders are the most likely to suffer military defeats, middle-aged leaders to win military victories, and elderly ones to reach negotiated settlements. We use a mixed-methods strategy to substantiate our claims, combining case studies of George Washington and Yasser Arafat with new data from the Rebel Organization Leaders (ROLE) database. Our findings help advance the study of non-state violent leaders in world politics while illuminating neglected sources of risk and opportunity for peace practitioners.

Keywords

Rebel leaders, civil wars, war outcomes, first image, age, original data

Why do some civil wars end in an outright victory for one side, others end in a negotiated settlement, and still others just 'fizzle out' over time? Recent research offers numerous possible answers, from state institutions and rebel organization

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characteristics to tactical choices and external sponsors. This study takes a different approach. We contend that *rebel leader attributes* – who individual rebel leaders are, and what skills, experiences, and dispositions they bring to bear – help explain their organizations' wartime decision-making, and by extension, how war comes to an end.

In particular, we hone in on one critical attribute – the age of a rebel leader – and its effects on war outcomes. Applying insights from developmental psychology to the context of rebellion, we distinguish broadly between young, middle-aged, and elderly rebel leaders. Young leaders are the most likely to "flame out" and suffer total military defeat in rebellion. This largely stems from their lower levels of restraint and emotional control, which tend to make them overaggressive and mistake-prone when leading rebel campaigns. Elderly leaders are the most likely to seek negotiated settlements, due both to their shortened time horizons and concern with their legacies, and to greater diplomacy and social reasoning skills. Middle-aged leaders are the most likely to achieve military victory, having both the steadiness to avoid youthful over-aggression and the stamina to pursue long-term maximalist goals. In sum, young rebel leaders are more likely to lose, elderly ones to make peace, and middle-aged ones to win their campaigns.

We conduct three different sets of analyses to test our theory. First, illustrative case studies of two well-known rebel leaders – George Washington and Yasser Arafat – demonstrate the plausibility of the theory's argument and mechanisms, showing how important components of age-related decision-making contributed to the outcomes of the rebellions these men led. Second, we use the Rebel Organization Leaders (ROLE) database, which contains biographical information on rebel leaders active in civil wars from 1980–2011 (Acosta, Huang, and Silverman 2022). We combine these data with organization-, state-, and conflict-level data to systematically investigate the impact of rebel leader age on the probability of different war outcomes. Finally, we probe the proposed causal mechanisms by analyzing how leader age shapes other relevant conflict dynamics, notably the use of terrorism.

Overall, the findings provide significant empirical support for our contentions. We find consistent evidence that rebel leader age matters: young rebel leaders are the most likely to lose, middle-aged leaders are the most likely to win, and older rebel leaders are the most likely to reach negotiated settlements. Moreover, the results on intermediate outcomes help corroborate our findings, showing as expected that younger rebel leaders are the most likely to employ terrorist attacks. These effects are meaningful in substantive terms and robust to serious efforts to account for possible confounders, including leader experience and conflict duration.

These findings offer important implications. For scholars, they show that rebel leader age is an important factor bearing on conflict dynamics and outcomes and should be included in analyses of rebel behavior in areas as diverse as terrorism, restraint, cohesion, and willingness to negotiate. For policy, they suggest that young rebel leaders may pose specific risks to international security, while leaders in the 'twilight' of their careers may be valuable assets in peacemaking due to their greater

capacity for compromise. Meanwhile, the study shows the value of incorporating rebel leaders into the study of war more broadly. In recent years, the first image in IR has made "a significant comeback" (Horowitz and Fuhrmann 2018, 2075), with new theories and leader-level data on heads of state. Our study urges a similar turn toward including *nonstate* leader attributes in conflict research, helping bring rebel leaders more fully into the empirical study of war.

Conflict Outcomes and a Turn to Rebel Leader Attributes

The literature on the determinants of civil war outcomes identifies several factors that help account for why some wars end in government victory, others in rebel victory, and still others in a peaceful settlement. One is the fighting strength of the warring parties; rebels are more likely to win when they can mobilize more fighters (Cunningham, Gleditsch, and Salehyan 2009). Similarly, external support for rebel organizations greatly boosts their likelihood of victory (Acosta 2014a), as does rebels' ability to form alliances with other groups (Akcinaroglu 2012).

In addition, the "technology of rebellion" is systematically associated with war outcomes: irregular (or guerrilla) wars are more likely to end in government victories, while rebels are more likely to win conventional conflicts; whether wars are fought conventionally or not has much to do with the international system (Kalyvas and Balcells 2010), which also shapes actors' normative understandings of how civil wars ought to end (Howard and Stark 2018). On the government side, an overreliance on mechanized forces can make states more vulnerable to defeat (Lyall and Wilson 2009). Tactics also matter: rebel organizations that use terrorism are generally less likely to win or reach a settlement as compared to those that do not (Abrahms 2012; Fortna 2015), and similarly, decapitation strikes make rebels less capable and thereby less successful (Johnston 2012). Finally, some studies also highlight the role of states' domestic political institutions, though their effects are still debated (Acosta 2014b).

Existing studies thus focus on factors such as rebel organizations' capability and resources, states' structural features, the international context, and belligerents' choice of tactics. Yet, largely absent from these studies is a consideration of how rebel *leadership* shapes war outcomes. We argue that who rebel leaders are as individuals should have significant bearing on how rebellion unfolds and ends, and more broadly, that the study of rebel politics would greatly benefit from a turn toward individual-level leadership analysis.

There are multiple reasons to think rebel leaders' personal attributes affect war outcomes. First, a large body of work in IR holds that the attributes of state leaders – their experiences, beliefs, dispositions, and even medical conditions – affect macro-level outcomes in international politics, including their states' behavior in war (Goemans, Gleditsch, and Chiozza 2009; Horowitz and Fuhrmann 2018; Horowitz, Stam, and Ellis 2015; Jervis 1976; Kertzer and Rathbun 2015). Since little in these

theories relate only to state leaders, we should expect rebel leaders' backgrounds and attributes to likewise shape their organizations' behavior in civil conflicts.

Second, conflict research offers numerous theories that center on the decision-making of rebel leaders, reinforcing the importance of examining leadership. For example, Christia's (2012) explanation of how and why armed groups form alliances at its core focuses on how militant leaders make strategic decisions and justify them to constituents. Similarly, Thomas and Bond (2015, 489) argue that women participate in militant groups when leaders "provide space" for women and actively enable them to join. In his book on the drivers of rebel success, Abrahms (2018, 1) stresses the role of effective leaders who encourage restraint among fighters, asserting that "rebel leaders have a surprising amount of agency over their political destiny."

Finally, data availability previously narrowed the scope of theory-building in this arena. Scholars have generated useful cross-national datasets of systemic and state attributes, conflict-level characteristics, and rebel organizational features (Acosta 2019; Fearon and Laitin 2003; Gleditsch et al. 2002; Huang 2016), in tandem with the development of an abundance of structural and organizational theories of conflict. Yet, with few exceptions, there has been a dearth of (elite) individual-level theories of rebellion, likely owing to a lack of comprehensive data on rebel leadership characteristics. After all, theory-building for state leaders' conduct in international politics blossomed after the introduction of datasets like ARCHIGOS and LEAD (Goemans, Gleditsch, and Chiozza 2009; Horowitz, Stam, and Ellis 2015).

Our analysis joins a handful of emerging studies on the effect of rebel leader attributes on conflict dynamics. Prorok (2016) shows that rebel (and state) leaders who initiate rather than inherit civil wars are likely to fight to the bitter end of their disputes; Doctor (2020) finds that rebel leaders with military experience maintain organizational unity in their movements; and Huang, Silverman, and Acosta (2022) show that rebel leaders with significant prior international experiences are better able to secure external support thanks to their transnational social networks. Advancing this research agenda, this article offers a new theory focused on leaders' life stage, which we show has important effects on war dynamics and outcomes.

Our work also speaks to existing research on leader age and international security. Notably, Horowitz, McDermott, and Stam (2005) find that older heads of state have a greater propensity toward foreign aggression, though the relationship varies by regime type. In contrast, in a sample of democracies, Bertoli, Dafoe, and Trager (2019) find that younger leaders tend to initiate more disputes. Meanwhile, Abrahms (2018) offers a crucial contribution by suggesting that young and inexperienced militant leaders are more aggressive, providing a mixture of anecdotal evidence and indirect statistical tests to support his claims. While our study builds on these works, it breaks new ground by developing a new, *non-linear* theory linking leader age and conflict behavior which explains several outcomes (negotiated agreement, rebel victory, and rebel defeat) at once and predicts that *middle-aged* rebel leaders are likeliest to prevail.

Age and Rebel Leadership

Before proceeding to the theory, we offer a few caveats. First, our theory is contextual in one key sense: contemporary rebellions are nearly universally led by men, with only one female out of 425 leaders in the sample used in the ROLE database (Acosta, Huang, and Silverman 2022). Our argument about youthful aggression is partly rooted in research on testosterone in young men, and may not apply equally to a context full of female leaders. Second, like most other social science theories, ours is decidedly probabilistic, identifying tendencies in behavior and not uniform effects. There will thus be a number of cases that deviate from the theory. Third, we theorize how aging interacts with the conditions of rebellion and strategies that foster rebel success. Notably, we build on a scholarly tradition that argues *restraint* is crucial to rebel achievement (Abrahms 2018; Fortna 2015; Hoover-Green 2016; Kalyvas 2006; Stanton 2016; Weinstein 2007). Domains of leadership that reward maximal confrontation and aggression rather than restraint and control may alter our theorized linkages between aging and achievement. Finally, we focus on the top leader of each organization. While some rebel organizations feature multiple individuals who jointly exercise leadership, for many others, a top leader remains the preponderant and unmatched powerholder. If, as IR research shows, the attributes of heads of state in democracies affect their states' behavior (Bertoli, Dafoe, and Trager 2019), our focus on top leaders is warranted for rebel organizations wherein leaders typically enjoy more discretionary power.

The first building block of our theory centers on youth and aggression among men. Studies in criminology and other fields show that young men between about 15 and 30 years of age commit most criminal and political violence globally (e.g., Hirschi and Gottfredson 1983). While several factors explain this phenomenon, perhaps the most prominent is the role of testosterone. Biological research shows that serum testosterone in the blood peaks in males roughly in their mid-twenties and falls thereafter at around one percent per year (Epstein 2018; McDermott et al. 2007). This is important because higher levels of testosterone are linked to a number of behavioral consequences among men, including the pursuit of dominance over others, a desire for excitement, a propensity to act impulsively, and a tendency to engage in aggression and violence (Batrinos 2012; Wagels et al. 2018). Further, there is strong support for a "challenge hypothesis" whereby men with more testosterone are more likely to be aggressive when challenged or placed in a competitive situation (Archer 2006). In such contexts, higher levels of testosterone facilitate a willingness to engage in confrontation and violence, while "lower levels of testosterone correlate with self-control and social conformity" (McDermott et al. 2007, 19). This means that younger men are more likely act on impulse, seek status and dominance, and use violence and aggression when challenged or provoked compared to their older counterparts.

Combining these realities with the exigencies of modern rebellion, we contend that young men are at a distinct disadvantage as rebel commanders. Our theory builds on a rich body of work demonstrating the centrality of exercising *restraint* for rebel success

(e.g., Abrahms 2018; Hoover-Green 2016). Indiscriminate attacks against civilians are generally counterproductive for rebels strategically (Abrahms 2018; Abrahms and Mierau 2017; Fortna 2015; Kalyvas 2006; Stanton 2016). Nevertheless, rebel foot soldiers often resort to such forms of violence both because civilians are easier to attack and because they satisfy an emotional impulse for retaliation against the enemy. As Abrahms' (2018, 11) argues, "smart leaders prevent their fighters from harming civilians, boosting their likelihood of victory" while those who are not "smart" encourage widespread use of such tactics, expediting their organizations' demise. In other words, militant organizations with leadership deficiencies frequently turn to tactics that satisfy the process aims of lower-level operatives and yet simultaneously make the organization less likely to achieve its outcome goal or "win" (Abrahms 2018; Abrahms and Mierau 2017). A core challenge of rebel leaders is thus to *tamp down* this impulse of their rank-and-file recruits.

So which leaders are "smart" or not in the first place? Putting together our discussions of youthful aggression and restraint, we contend that young rebel leaders are more likely to use bloody tactics than their older counterparts.[1] This arises from our preceding discussion about male age, testosterone, and behavioral tendencies: younger men are more prone to anger and aggression, especially when challenged; are more likely to escalate competitive situations to dominate others; and are less adept at managing angry responses to emotional stimuli (Phillips et al. 2006). We thus hold that younger rebel leaders are more likely to share or succumb to the emotional impulses of their foot soldiers for retaliation. When facing violent challenges, younger leaders will be more likely to call for aggression and escalation rather than to "back down" or show restraint. In contrast, older adults are better able to regulate their emotions. This dovetails with complementary studies from psychology showing that older people report better emotional stability and regulation skills (Carstensen, Fung, and Charles 2003) and use a wider range of emotional control techniques in difficult situations (Blanchard-Fields 2007). Older leaders will therefore tend to be less vulnerable to these "hot-headed" responses and more likely to remind members of the "big picture" and their broader aims of building sufficient support for victory or a favorable settlement in the conflict. In sum, if restraint represents a key ingredient in rebel success, and over-aggression a recipe for failure, the attributes of young rebel leaders make them more prone to military defeats.

H1: Rebel organizations with young leaders are more likely to suffer military defeats than those with middle-aged or elderly leaders.

With youthful liabilities behind them, rebel leaders who are middle-aged or elderly are less likely to lose than their young counterparts. However, the two groups differ in their capabilities and preferences. We maintain that elderly rebel leaders are more likely to reach negotiated settlements to end conflicts than middle-aged rebel leaders, who are still apt to chase outright military victory. This contention has multiple roots. First, gerontology research finds that older people tend to be more skilled at social reasoning,

with a greater ability to see different perspectives, devise acceptable compromises, and resolve conflicts than their younger peers. One study showed people vignettes about three social disputes (Grossmann et al. 2010). Responses to these vignettes were rated on six dimensions by multiple coders and by an expert panel. The results showed that elderly adults scored better on almost every dimension of "social wisdom" than mid-life adults, with greater ability to see problems from alternative points of view and come up with compromise solutions that could plausibly satisfy both sides. Other studies reach similar conclusions about old age and an increased ability to successfully resolve disputes and manage emotions (Blanchard-Fields 2007; Carstensen, Fung, and Charles 2003). Elderly rebel leaders are thus more likely to use their enhanced capacity for compromise and reach negotiated settlements in conflicts.

Second, elderly rebel leaders are also more likely to peacefully settle disputes due to their shorter time horizons and tendency toward "legacy thinking." Developmental psychology research suggests that older individuals often reach a life stage where they realize they have little time left, reflect on their accomplishments, and think about what they are leaving behind for posterity. Some refer to this as "generativity," one of the latter stages in Erikson's (1950) influential model of psychosocial development. A closely related construct in other fields is legacy thinking, which centers on how older people often become concerned with how they will be remembered by future generations (Frumkin, Fried, and Moody 2012). These ideas lead us to expect that elderly rebel leaders will not want to die without any "outcome goal achievement" and concrete gains for future generations; rather, they will want to leave something positive behind to support both their legacies and their communities. Given that rebel organizations are generally weaker than their state opponents and that a victory through force of arms is unlikely, especially in a short time period, these motives will push leaders to set aside maximalist claims and pursue a negotiated settlement that can achieve at least some of their conflict ambitions.

H2: Rebel organizations with elderly leaders are more likely to reach negotiated settlements than those with young or middle-aged leaders.

Where does this leave middle-aged rebel leaders? On the one hand, middle-aged rebel leaders lack the "rashness" and aggressiveness of youth that we argue leads to a greater likelihood of military defeat. On the other hand, they also lack the urgency to reach any reasonable settlement that we argue often characterizes elderly rebel leaders acutely aware of their own mortality and possessing the enhanced negotiation skills that can accompany old age. This means that middle-aged leaders are likely more capable than young leaders, yet more committed to maximalist goal achievement than elderly leaders. In other words, middle-aged rebel leaders are the most likely to have both the aptitude and the ambition to strive effectively for outright victory.

H3: Rebel organizations with middle-aged leaders are more likely to win military victories than those with young or elderly leaders.

Anecdotal evidence from diverse sources speaks clearly to some of the links in our theory, including the relationship between youth and propensity toward political aggression and violence. Lee (2011) finds in a study of Muslim terrorists in British India that the violent activists were on average about 3 years younger than non-violent activists. Likewise, in a study of the politics of resistance in South Africa's Robben Island prison, Buntman (2003) highlights a key rift between older and younger prisoners in terms of their dedication to militant methods. In particular, younger prisoners tended to use "militant defiance as a matter of course," while older prisoners adopted a more "strategic" and "careful…approach" (130). And in post-Arab Spring Egypt, analyses of the Muslim Brotherhood often stress the growing gap between an "old guard" of top leaders dedicated to democratic and peaceful means and younger rising activists who are attracted to more aggressive and violent approaches in the face of state repression.[2] These descriptive snapshots are suggestive, as are images of elderly peace-makers in major conflicts such as Ho Chi Minh and Yitzhak Rabin. Yet we now turn to our two case studies to more fully probe the theory's plausibility, followed by a quantitative test of its key propositions.

Case Studies

In this section, we use two brief case studies – on George Washington and Yasser Arafat – to breathe life into our argument. These case studies serve as illustrative exercises and theoretical 'proofs of concept' that help provide plausibility to our claims. While this is not a test of our theory, the selection of these two cases does offer some analytical advantages. First, the cases come from two centuries apart and from radically different social, economic, and political contexts. In this, they approximate some elements of a "most different" design, such that if we observe supportive evidence for our theory in such divergent settings, that should strengthen its appeal. Second, by conducting "within-case" comparisons of these leaders at different ages, we are able to "hold constant" their stable individual-level characteristics rather than comparing two different leaders who diverge in many more ways than their stage of life. And third, choosing two of the most famous rebel leaders of all time ensures a rich store of biographical material, allowing a careful scrutiny of the links in our argument.

George Washington

George Washington's extensive career as both a militia and a rebel leader exemplifies multiple parts of our theory. Born in 1732, Washington grew up in a family that was part of the second-tier of the aristocracy of colonial Virginia. Eager to prove his merit but lacking a top-flight name and education, the young and ambitious Washington gravitated toward a military career, and at the tender age of 20 he was made a colonial militia leader in Virginia as the British prepared to face the French for control of the "Ohio country" in Colonial America. The personality of this young Washington

contrasted sharply with the famous self-control he later developed. In his book *Young Washington*, Stark (2018) describes him as follows:

> *"This young Washington is ambitious, temperamental, vain, thin-skinned, petulant, awkward, demanding, stubborn, annoying, hasty, passionate. This Washington has not yet learned to cultivate his image or contain his emotions. Here, instead, is a raw young man struggling toward maturity and in love with a close friend's wife. This is the Washington of emotional neediness, personal ambition, and mistakes – many mistakes."*

After Washington handled himself well in a brief diplomatic mission with French forces at Fort Duquesne (later renamed Fort Pitt, in present-day Pittsburgh), he was soon made the second-in-command of an expanded militia raised to challenge the French. When an accidental death felled the top leader Joshua Fry, Washington at the young age of 22 was thrust into overall command of Virginia's colonial forces. While Washington thus became a top militia leader, he faced conditions much like those of a rebel commander, leading a small band of about 300 men against a much larger and stronger state army (the French had over 1,000 troops at Fort Duquesne, plus formidable allied Native American contingents). The incentives for Washington were thus strongly in favor of waiting for reinforcements from other colonies to provide some hope for a favorable result.

Yet, Washington – who was "mad for glory" (Ferling 2009) – decided to take the offensive in an action that would spark the global conflict known in the United States as the French-Indian (and in Europe as the Seven Years) War. Acting on his own initiative, Washington tracked down and attacked a small diplomatic mission led by the French Colonel Joseph Coulon de Jumonville without provocation. In what became known as the "Jumonville Affair," Washington's forces slaughtered the 35 French soldiers of Colonel Jumonville as they roused in their tents, and Washington's Native American allies set about scalping and butchering the Frenchmen after their surrender. When Jumonville tried to read his diplomatic message to halt the carnage, the leader of Washington's Native American allies, the "half-king" Tanacharison, split Jumonville's head with a tomahawk and then doused his hands in the latter's brains. "Immobilized either by bloodlust or the awful sights that he was beholding for the first time, Washington made no attempt to stop the carnage" (Ferling 2009, 22).

Afterwards, he treated the encounter as a military success and wrote famously back to his brother: "I heard the bullets whistle, and, believe me, there is something charming in the sound." Of course, Washington knew that French retaliation would come, and the military situation still dictated that he was outnumbered and should retreat. Nevertheless, he instead dug in with his paltry force of several hundred men and awaited the inevitable French reprisal, believing arrogantly that he could repel it. A French force of 900 men and its Native American allies soon counterattacked under Jumonville's half-brother, Louis Coulon de Villiers, and trounced Washington's militia at Fort Necessity. The French forced a humiliating surrender in which Washington formally admitted to an "assassination" of Colonel Jumonville – a propaganda coup for France (Chernow

2010). In sum, Washington showed himself to be an emotional and impetuous young commander at the age of 22, spoiling for a fight, eager to escalate even in unfavorable circumstances, and ignorant of the strategic costs of being seen as an aggressor.

This image of Washington as a hot-headed youth contrasts sharply with his later approach as a rebel leader. George Washington was pressed into service as the Commander-in-Chief of the Continental Army and military leader of the American rebellion two decades later at the age of 45. Washington had grown much in that time, oscillating between military service and spending time as a colonial planter and manager of his vast Mount Vernon estate. By all accounts he had matured considerably in the intervening years. As Ferling (2009, 89) noted:

> *"Gone was the man who, in an earlier war, had abandoned his men repeatedly to look after his personal interests. Gone was the man who had been too busy with private pursuits to tend to his obligations in the assembly. The times and the cause demanded that he recast himself. He became General Washington, the self-denying and unstinting warrior who was focused on the national interest and on victory."*

In his 40s as leader of the Continental Army, Washington embodied many of the qualities of the effective middle-aged rebel commander we described earlier. He had largely suppressed his tempestuous youthful tendencies, and was seen as a calm and thoughtful figure. He was not unduly committed to an aggressive posture in war, shifting between scoring striking surprise victories at Trenton and Princeton in 1776–77 and employing a more cautious "Fabian strategy" in which he avoided unfavorable encounters for much of the war (Palmer 2012). He also understood the need to avoid committing harms to fence-sitting civilians or any other acts that could help the enemy politically, becoming puritanical about his army's humane treatment of British Prisoners of War (POWs) and avoidance of theft from and harm to local farmers (even when his men were starving). His "overriding goal was to contrast his own humane behavior with the predatory ways of the enemy" (Chernow 2010, 287) – a key dictum of insurgent versus counterinsurgent contests. In sum, Washington as a rebel leader generally understood restraint. Yet he was also passionately committed to victory, unwilling to entertain any peace overtures from England, and unyielding in his pursuit of American independence. If his youth epitomized the rash and over-aggressive young soldier, his later years exemplified the careful and committed middle-aged commander striving for victory and success.

Yasser Arafat

If Washington's career illustrates our arguments about both youth and middle age, Arafat's tenure perhaps best exemplifies our claims about the role of old age and mortality salience on rebel leadership. Born in 1929 to a Palestinian family in Cairo, Yasser Arafat gravitated toward political activism early in his life and became an ardent Palestinian nationalist at Cairo University. In 1958, at age 29, Arafat co-founded Fatah

with several Palestinian activists as a vehicle for Palestinians to take the reins of their struggle. After the crushing defeat of Arab countries in the 1967 "Six-Day War" with Israel, Fatah replaced its rivals as the major force in the nascent Palestine Liberation Organization (PLO) umbrella organization and started to become the primary locus of Palestinian resistance. Sporting fatigues, a *keffiyeh*, and a pistol, the Arafat who oversaw the PLO's militant campaigns from Jordan, Lebanon, and Tunisia over the next 20 years cut an image as an aggressive and determined rebel fighter. Arafat's leadership style was "marked by tendencies toward forcefulness, aggressiveness, and a readiness for extended struggle" for Palestinian sovereignty (Klein 2019, 9). Zealously committed to the cause, Arafat sanctioned bloody tactics over the years such as the use of large-scale terrorist attacks by Fatah (e.g., the 1975 Savoy Hotel attack and the 1978 Coastal Road massacre) and even more militant groups including Black September (e.g., the 1972 Munich Massacre), and for many years showed little propensity to entertain anything other than a maximalist outcome to the conflict from the Palestinian perspective.

However, in the late 1980s and the early 1990s when an Israeli-Palestinian peace process started to gain significant momentum, Arafat made some notable gestures for peace. Specifically, in 1988 Arafat publicly renounced terrorism, recognized Israel's right to exist, and agreed to abide by U.N. Resolution 242 (the international organization's 1948 partition plan), setting the table for meaningful direct negotiations between the two parties. Along with Israeli Prime Minister Yitzhak Rabin, Arafat signed two important peace agreements in 1993 and 1995 as part of the "Oslo peace process," which agreed to a framework for a two-state resolution to the conflict and established a semi-autonomous Palestinian Authority to rule Palestinian territory. These choices represented a substantial departure for Arafat; perhaps the lasting image of this era is of the historic handshake between Arafat and Rabin under the watchful eye of U.S. President Bill Clinton at the White House in 1993.

While alternative factors like the collapse of Soviet support and Arafat's miscalculation of allying himself with Saddam Hussein in the Gulf War likely played important roles in these events, a number of observers have located Arafat's readiness to compromise in his relatively advanced age as well as a major brush with death in the early 1990s. Arafat was well into his 60s by the time of Oslo and had faced many attempts on his life. As noted by one observer: "A variety of personal and political reasons steered Arafat toward his rendezvous with peace, according to those close to him. At 64, he was sensing his own mortality…[and] he was worried, aides say, that he would never get the chance to be buried in the soil of his forefathers."[3] Not only was Arafat fast advancing into old age, he also faced a miraculous near-death experience in April 1992 as an old Soviet plane on which he was traveling crashed into the Libyan desert, killing several crew members but leaving him alive. The narrow escape reportedly had a strong impact on Arafat, with "PLO sources [saying] that the crash reminded him of his mortality more than any previous incident."[4] Indeed, "several intimates say that it was this 'New Arafat' [post-crash] who decided to compromise more often, leading him to back off from his insistence of dealing with the question of

Jerusalem first."[5] In the words of leadership scholars Jerrold Post and Alexander George, Arafat in the early 1990s took a "terminal risk for peace" with his advanced age and the recent near-death experience acutely in mind (2004, 90).

Further, many of Arafat's contemporaries in the conflict were similarly advanced in age and may have also felt pressure to find a peaceful resolution to the conflict in the 1990s with whatever time they had left. For example, PLO leader Mahmoud Abbas (born in 1935) was also an erstwhile hardline militant in his earlier years who had undergone a "conversion" and become an outspoken peacemaker by this time. PLO leader Bassam Abu Sharif even quipped that if "[former Israeli Prime Minister] Menachem Begin could see the light and understand the virtues of peace after his years as a terrorist, then why can't Yasser Arafat and the rest of us?"[6] Jordan's King Hussein (also born in 1935) likewise doubled down on his peace-making activities after his cancer diagnosis in 1992. Hussein admitted that his illness increased the urgency of making peace, saying "I felt an element of fear – of insecurity – about what might happen if I was not there, so I knew that I had to do everything I could, in whatever time I had left, to achieve peace and make it work."[7] Hussein went on to sign a peace treaty with Israel in 1994 and rose from his hospital bed to give an impassioned speech urging the negotiating sides to continue and reach a final settlement at the Wye Plantation in 1998. Though a state leader, Abdullah's behavior fits the pattern of mortality salience intensifying the desire for peace-making among older leaders. Even in the case of Syrian dictator Hafiz al-Assad, it was said that his age and the untimely death of his son Bassel "deeply influenced his father's sense of urgency about getting back the occupied Golan Heights before he, too, meets his maker."[8] In sum, Yasser Arafat and some of his major counterparts in the Arab-Israeli conflict took uncharacteristic risks for peace in the 1990s that careful contemporary observers attributed at least partly to their advancing age, deteriorating health, and fear of potential demise before they could achieve their core objectives.

But what of the breakdown of the peace process in the late 1990s and Arafat's sanctioning of violence in the 2nd Intifada from 2000-04? How can this be compatible with the idea of him as an aging peacemaker? Two crucial points must be made on this front. First, some of the most thoughtful analyses of the failure of Oslo (e.g., Pressman 2003) reveal that prevailing Western narratives about Palestinian rejectionism are misleading and that both leaderships showed a considerable willingness to compromise on the core "final status" issues, but were hampered by mutual misperceptions and signaling problems as well as strong domestic political pressures and "spoilers" on both sides (see also Pearlman 2009). As for the 2nd Intifada, the pivot toward violence in the Palestinian territories was driven chiefly by *younger* and more militant activists in the West Bank and Gaza who were angry about the stagnation (and even backsliding) of the peace process and their older counterparts' pragmatic approach, and less leery of the political costs of terrorism. As stated by leading Palestinian pollster Khalil Shikaki (N.D.), "the [2nd] Intifada has been a clearly articulated and organized response by the *Young Guard* in the Palestinian national movement…to the failure of the PLO's *Old Guard*" to achieve its primary goals via negotiation. In this sense, the events of Oslo and

the 2nd Intifada are not incompatible with our depiction of Arafat and the aging PLO leadership as favoring compromise, and even reinforce the idea that it is the younger members of resistance movements who drive aggressive and escalatory behavior.

Quantitative Research Design

While these case studies are highly suggestive, we now examine our argument more systematically by analyzing data from the Rebel Organization Leaders (ROLE) database. ROLE contains a rich store of biographical information on 425 top leaders (488 cases of leadership overall) of rebel organizations that fought in civil wars between 1980 and 2011 (Acosta, Huang, and Silverman 2022). ROLE's sample of rebel leaders comes from work by Prorok (2016), who identified the top leaders for almost all rebel organizations in the Uppsala Conflict Data Project's (UCDP) Non-State Actors in Armed Conflict Dataset (NSA) (Cunningham, Gleditsch, and Salehyan 2013). All variables on rebel leader attributes described below are from ROLE.

Dependent Variable

To evaluate the impacts of rebel leader attributes on conflict outcomes, we use multinomial logistic regression modeling. This follows other recent work on the outcomes of rebel campaigns (e.g., Fortna 2015; Prorok 2016), as the method is appropriate for exploring associations between a set of explanatory variables and multiple unordered response values, such as the ways in which rebel campaigns end. We examine four campaign outcomes versus the baseline category of continued armed resistance: (1) negotiated AGREEMENT between the rebel organization and its government adversary, (2) GOVERNMENT VICTORY over the rebels, (3) REBEL VICTORY over the government, and (4) rebel organization INACTIVITY.[9] Data on campaign outcomes are from the aforementioned NSA database. The status quo of continued resistance is the most common value of the dependent variable (DV) (86.5% of leadership-years), followed by termination due to inactivity (6.3%), agreement (3.7%), government victory (2.0%) and rebel victory (1.5%).

Leader-Level Explanatory Variables

Our key explanatory factor is the continuous variable AGE, representing the rebel leader's age (measured in years) during each year he or she is in the dataset (see Figure 1). This is a dynamic variable and changes with each passing year of a rebel campaign. Critically, because our theory is explicitly non-linear, with, for example, a peak in the chances of rebel victory expected among middle-aged leaders but not young or elderly rebel leaders, we also include AGE SQUARED in our model. This allows us to model curvilinear relationships and to see whether the odds of a particular outcome peaks in the predicted part of the age distribution. Strikingly, leader age in our database ranges from nine to 120. In the case of the nine-year-old Htoo twins from Myanmar, a

local pastor reportedly named them joint leaders of the God's Army organization after "God" spoke to him. As for Pu Kyaung Long, head of Myanmar's Lahu National United Party (LNUP), he reportedly lived to be 120 and founded the LNUP 7 years before his death (Acosta, Huang, and Silverman 2022). Excluding these outliers, the range is 14–88.

Does age link to campaign outcomes as expected? Table 1 shows a simple cross-tabulation between young (35 and under), middle-aged (36–64), and older (65 and over) rebel leaders and the associated probabilities of each of the three main campaign outcomes of interest: peace agreement, government victory, and rebel victory. Older rebel leaders have the highest chance of reaching an agreement (5.44% of observations), young leaders of suffering a military defeat (3.69%), and middle-aged leaders of achieving a full rebel victory (1.86%). While some of the differences across groups are

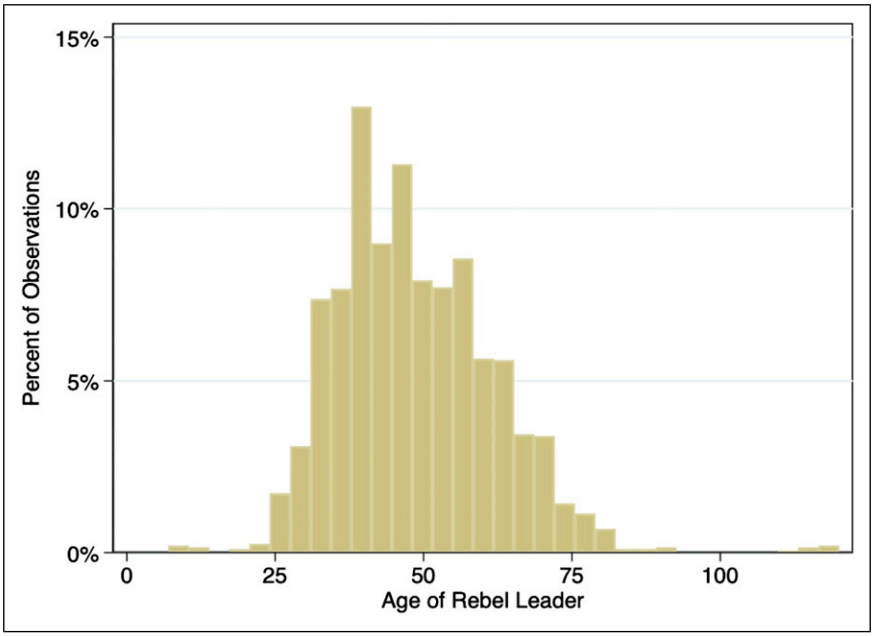

Figure 1. Distribution of Rebel leader age.

Table 1. Probability of Key Campaign Outcomes Among Young, Middle-Aged, and Older Rebel Leaders.

	Young (35 and under), %	Middle-aged (36–64), %	Older (65 and over), %
Peace agreement	1.64	3.72	5.44
Govt. Victory	3.69	1.71	2.36
Rebel victory	1.64	1.86	0.71

larger than others, the table is generally consistent with our core argument and offers a "green light" to pursue a more comprehensive statistical analysis.

Alongside age, other attributes of rebel leaders may also help explain campaign outcomes. It is possible that middle-aged and elderly rebel leaders achieve more often not due to their age but because they tend to be more educated, thus requiring that we control for educational attainment as a potential confounder. The ordinal variable EDUCATION ranges from 0 to 5, capturing whether the leader: did not finish primary school (0); finished primary school or equivalent (1); finished secondary school or equivalent (2); earned a bachelor's degree or equivalent (3); earned a master's degree or equivalent (4), or obtained a doctorate (5) before assuming leadership. With similar rationales, we include two other variables related to a rebel leader's history of conflict involvement. The binary variable MILITARY EXPERIENCE captures whether the leader served in the armed forces of an internationally-recognized state before assuming rebel leadership. The binary variable COMBAT EXPERIENCE documents whether the leader had combat experience, whether from fighting in a state's armed forces or fighting in a rebel organization, prior to rebel leadership.[10]

Organization-Level Controls and Alternative Explanatory Variables

We combine data from ROLE with other major explanations for conflict outcomes at the organization-, state-, and conflict-levels of analysis. To begin with, given that many scholars focus on rebel group size or strength as the most important organizational variable for explaining a range of conflict outcomes (DeNardo 1985; Krause 2013), we add the ordinal variable REBEL STRENGTH from the NSA dataset (Cunningham, Gleditsch, and Salehyan 2013). Likewise, given that many studies recognize the importance of state sponsorship for war outcomes (Byman 2005; Carter 2012; Salehyan, Gleditsch, and Cunningham 2011), we add the NSA dataset's REBEL STATE SPONSOR variable. Since scholars also stress the importance of rebel organizations' exploitation of natural resources for civil conflict dynamics and outcomes (Lujala 2010; Ross 2004), we add the binary variable REBEL RESOURCE USE from Rustad and Binningsbo (2012). Lastly, we include an indicator from Wood and Thomas (2017) for whether the rebels have an ISLAMIST ideology, as recent research suggests that Islamist rebellions may bring about different international dynamics that make them more intractable than rebellions with other types of ideological underpinnings (Nilsson and Svensson 2021).

We also include several conflict- and state-level variables often used in existing studies of war outcomes. First, we include an indicator for TERRITORIAL CONFLICT from the NSA dataset, as territorial conflicts may have fundamentally different dynamics than non-territorial ones (e.g., Buhaug 2006; Holtermann 2019). Second, we add an indicator for ETHNIC CONFLICT from NSA, since some studies find that ethnically divided polities face not only different risks of conflict but also different conflict dynamics once war has begun (e.g., Denny and Walter 2014). Third, as state-level variables capturing the capabilities and intentions of the state opponent, we

include the adversary's POLITY SCORE and GROSS DOMESTIC PRODUCT (GDP) PER CAPITA. We expect that rebels are likely to be less successful against adversaries with higher levels of GDP per capita and more democratic institutions, though there is still robust debate about the relationships between democracy and civil war dynamics (Acosta 2019; San-Akca 2014).

Main Empirical Results

Table 2 presents the results from our multinomial logistic regression, which simultaneously models these explanatory variables' effects on the likelihood of achieving each of the four types of campaign-ending outcomes versus the status quo of continued resistance. The continuous variables (rebel leader age, GDP per capita, and Polity score) are standardized to convey their substantive impact in a way that is more comparable to other variables included in the model, which are either dummy variables or short ordinal scales. Individually, the leader age and age squared coefficients show statistically significant relationships with some key outcomes, including government victory and rebel victory. But, because the marginal effect of age in our model is a nonlinear function of both the age and the age squared variables, we must look at their *joint* impact to interpret it. As an initial check, we test the joint significance of the age and age

Table 2. Multinomial Logit Model of Rebel Campaign Outcomes.

	Agreement	Govt. Victory	Rebel Victory
Leader level			
Leader age	−2.07 (1.37)	−5.04** (1.87)	7.13* (3.37)
Leader age squared	0.31+(0.17)	0.62* (0.25)	−0.85* (0.43)
Education	−0.04 (0.20)	−0.01 (0.29)	0.13 (0.26)
Military experience	−0.40 (0.59)	1.84** (0.61)	1.24 (1.04)
Combat experience	−0.45 (0.48)	0.39 (0.52)	0.54 (0.93)
Organization level			
Rebel strength	0.64* (0.28)	0.41 (0.28)	1.77*** (0.38)
Rebel state sponsor	0.01 (0.20)	−1.11** (0.41)	−0.53 (0.33)
Rebel resource use	−0.44 (0.40)	−1.29* (0.63)	−1.06 (0.92)
Islamist organization	−1.52 (1.09)	−0.65 (1.06)	0.34 (1.05)
State/Conflict level			
GDP per capita	−0.40 (0.38)	0.46 (0.30)	0.13 (0.37)
Polity score	0.26 (0.19)	0.08 (0.32)	−0.70+(0.39)
Territorial dispute	0.95* (0.47)	0.47 (1.02)	13.45*** (0.79)
Ethnic conflict	1.32** (0.44)	−0.32 (0.72)	−1.02 (0.91)
Constant	−1.97 (2.53)	5.10+(2.92)	−34.88*** (6.26)
Observations	1,116	1,116	1,116

Note: Results from multinomial logistic regression. Dyad-clustered standard errors in parentheses.
***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, + $p < 0.1$.

squared terms in the model. We find that the terms are jointly significant for all three major outcomes ($p = 0.008$ for agreement, $p = 0.014$ for government victory, and $p = 0.046$ for rebel victory), affirming that they should be included and enhance the model's explanatory power. To investigate their marginal effects more meaningfully, however, we must plot the predicted probabilities of each of the campaign outcomes by age (see, e.g., Brambor, Clark, and Golder 2006).

Figure 2 presents the predicted probability of each of the three key outcomes – agreement, government victory, and rebel victory – across rebel leader age every 5 years from 15 to 85.[11] The top left panel shows the probabilities for negotiated agreement, the top right for government victory, and the bottom left for rebel victory. Visually, we can see that the figure provides solid support for our hypotheses. As predicted in H2, the likelihood of a campaign ending in a negotiated agreement spikes sharply for leaders in old age, surpassing 20% in a given leadership-year versus about 5% among younger leaders. Likewise, as expected in H1, the chances of government victory are highest among young rebel leaders, especially those in their teens or twenties, topping 40% in a given leadership-year for the youngest leaders and declining sharply thereafter.[12] And as articulated in H3, the chances of a victorious campaign are maximized for those who are middle-aged, peaking at roughly 4% for leaders in this life stage and virtually disappearing for the very young or old. These patterns fit our expectations.

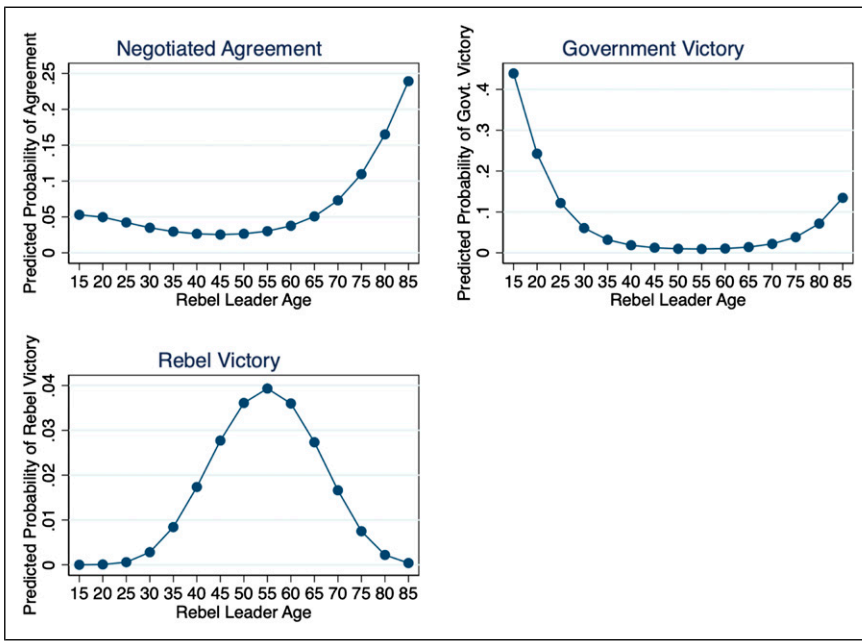

Figure 2. Effects of Rebel Leader Age on Campaign Outcomes. Note: Results are predicted probabilities plotted at each age from the model in Table 2.

In order to ensure these shifts are all statistically significant, we conduct joint significance tests comparing the predicted probability of each campaign outcome as one moves across relevant values of leader age. In particular, we can see whether an apparent shift in the predicted probability curve of one of the outcomes across some range of leader age in the graph is statistically meaningful by testing a baseline value against several other monotonically larger (or smaller) values where the change occurs. This can be done with post-estimation Wald tests that test multiple equivalence conditions simultaneously using a χ^2 distribution.[13] For negotiated agreement, a joint significance test that compares leaders who are 65 with those who are 70, 75, 80, and 85 – where the estimated chance of an agreement rises sharply in the graph – shows that this cumulative increase is solidly statistically significant ($p = 0.022$). A similar test comparing leaders who are 15 with those who are 20, 25, 30, and 35 for the government victory outcome indicates that the chance of a government victory indeed spikes significantly among the youngest leaders ($p = 0.000$). And this approach also confirms a statistically significant "peak" in the chance of rebel victory among leaders who are 55 versus those who are below ($p = 0.000$) and above ($p = 0.000$) that number. Overall, these tests thus confirm the visual evidence for our hypotheses gleaned from Figure 2.

Table 2 shows that many of the organizational, state-level, and conflict-level variables are also significant in the expected directions, reaffirming prevailing findings in conflict scholarship. Notably, rebel strength substantially boosts the chances of negotiated agreement and rebel victory, rebel state sponsorship reduces the chances of the conflict ending in government victory, and rebel natural resource use reduces the likelihood of government triumph as well. Meanwhile, democracy (marginally) reduces the probability of rebel victory, suggesting that political violence may be less effective when non-violent resistance pathways are more open (e.g., Gleditsch and Ruggeri 2010). Territorial disputes are less likely to end in rebel victory or agreement in our model, implying that governments may be resilient in the face of these challenges. And ethnic conflicts are more likely to terminate in negotiated agreements, which may reflect international preferences for imposing power-sharing agreements on these kinds of disputes (Howard and Stark 2018). At the leader level, besides age, we find that military experience boosts the chances of government victory, suggesting that – as is the case with heads of state (Horowitz, Stam, and Ellis 2015) – military socialization without combat experience may not be a normatively desirable combination among rebel leaders.

To substantiate the mechanisms behind our results, we examine a key intermediate link in our theory by looking at rebel use of terrorism. To do so, we use data from the Terrorism in Armed Conflict (TAC) database (Fortna, Lotito, and Rubin 2020). TAC is based on a process of matching events in the Global Terrorism Database (GTD) with the organizations that conducted them. We use a binary indicator of whether the rebel organization conducted terror attacks in a given leadership-year as our DV, replicating the base model with a logistic regression. The results (Appendix Figure A1) show that the predicted probability of rebel terrorism use peaks at 60% for the youngest leaders and falls off toward 40% among middle-aged and older ones; a joint significance test

like those described above shows this shift is highly statistically significant ($p = 0.000$). In other words, we find younger leaders are more likely to turn to terrorism – generally a self-defeating tactic from a long-term political and strategic perspective (e.g., Abrahms 2018; Fortna 2015) – thus lending credence to an important part of our theory.

Alternative Explanations and Robustness Checks

To make these findings truly persuasive, however, we separate leader age from two related concepts: (1) leader experience, and (2) conflict duration. It is key to account for leader experience because it could covary with age but presents a distinct pathway to success that flows through on-the-job learning rather than general maturation processes (Horowitz, McDermott, and Stam 2005). Conflict duration is important to control for as it, too, covaries with leaders' age and can shape rebel organization achievement (Acosta 2014b). We thus replicate the base models with the addition of LEADER EXPERIENCE, the number of years since the leader took over the organization, and CONFLICT DURATION, the number of years since campaign onset. The results (Appendix Figure A2) show that our core findings are unchanged; even when controlling for leader experience and conflict duration, young leaders are most likely to lose, middle-aged ones to win, and elderly ones to make peace. The joint significance tests associated with these shifts also all remain significant ($p = 0.041$ for agreement, 0.011 for government victory, and 0.000 for both sides of rebel victory). This helps significantly undercut concerns that a leader's age is proxying for experience or conflict duration in our analysis.[14]

We run various other tests to ensure robustness and address potential endogeneity concerns. To account for the possibility that rebel leaders of different ages are selected strategically by their cadres, we model rebel leaders' age upon assuming leadership as a function of how they came to power using data from ROLE: by founding the group, seizing power by force, winning an election, being appointed, or via unclear means. If age is the product of strategic selection, we would expect to see elections – the method in which other members of the group exercise the most discretion – lead to more middle-aged (or even elderly) leaders, since they tend to be more successful in their campaigns. At the very least, we would expect to see *some* significant linkages between the means by which leaders take power and their starting ages if age is driven by selection processes. Yet the results of a simple linear regression (Appendix Table A2) show no such linkages. Elected leaders are no more likely to be older or middle-aged versus young, mitigating concerns that age is the result of strategic selection by group cadres.

Another concern is that the age of rebel leaders may reflect differences in the age structures of their societies. Since youth bulges are linked to civil conflict (Urdal 2006), if younger leaders are more likely to emerge in younger societies, this may represent a significant inferential problem. To address this, we use data from the United Nations' World Population Prospects (WPP) database to add control variables for each country's (1) median age, and (2) population share under 30 years old to our base models. The

results (Appendix Figure A3) reaffirm our findings, with three of four joint significance tests significant at the 5% level and one at the 10% level *($p = 0.062$* for agreement, *$p = 0.000$* for the other three tests*)*. This casts doubt on the idea that the age distributions of different societies drive our results.

We also account for war culpability. Existing research shows that whether a leader initiated or inherited a civil war shapes their willingness to end it (Prorok 2016). If young leaders are more likely to initiate rather than inherit wars, this could present a serious inferential threat too. We thus replicate our base model with Prorok's (2016) measure of leader war culpability. While this variable exhibits some significant effects in its own right, Appendix Figure A4 shows that it has little impact on our results. The visual patterns of interest remain similar and the joint significance tests all remain significant *($p = 0.038$* for agreement*, $p = 0.000$* for the other three tests), suggesting that whether leaders initiate or inherit conflicts is not confounding our findings.

Additionally, one might worry that leader age is related to other leader-level attributes that independently shape campaign outcomes. To address concerns here, we control for the following leadership experiences from ROLE, in addition to those in the base model: (1) whether the leader is married, (2) whether the leader has children, (3) the leader's degree of international experience, and (4) whether the leader has high-level government experience. The first two are key personal experiences that may be connected to age and conflict behavior, while the latter two are important professional ones. The results from this test are shown in Appendix Figure A5; as above, we see similar visual patterns, and the joint significance tests remain significant across the board *($p = 0.017$* for agreement, and *$p = 0.000$* for the other three tests).

Finally, we add regional fixed effects (for Asia, Africa, Europe, and the Americas, with the Middle East omitted) and temporal fixed effects (for the Cold War and the post-9/11 periods, with the intervening years omitted) to the model. This is an additional test to help "soak up" underlying differences across regions or time periods that might conceivably shape the outcomes of rebellions and the individuals that lead them. The results of this check (Appendix Figure A6) again show the persistence of our findings, with similar spikes in the three graphs and the joint significance tests retaining their continued significance *($p = 0.027$* for agreement, *$p = 0.000$* for the other three tests). This enhances our confidence in our results' robustness.

Conclusion

In this study, we develop and test a theory linking the age of the top leader in a rebel organization with civil war outcomes. While existing studies identify numerous variables that affect whether a war ends in government victory, rebel victory, or a negotiated settlement, little systematic research has examined individual rebel leaders' backgrounds and attributes as drivers of conflict outcomes. Rooted in political psychology and well-established in IR scholarship, first-image analysis is enjoying a revival in the form of behavioral research on state leaders. Noting a dearth of similar

systematic studies on the effects of rebel-leader attributes, we use the ROLE database to demonstrate the benefits of a new research agenda focused on *who leads* resistance campaigns. This approach marks a major departure from studies focusing on the organizational, situational, and structural environments in which rebellions unfold.

In particular, our theory proposes that young leaders are the most likely to "flame out" and be defeated due to their tendencies toward over-aggression, while older leaders are the most likely to reach negotiated settlements due to their capacity for compromise and shrinking time horizons, and middle-aged leaders the most likely to win outright military victories by avoiding the rashness of youth and urgency of old age. Illustrative case studies of George Washington and Yasser Arafat demonstrated the plausibility of our argument, and analysis of new data on rebel leaders combined with existing conflict datasets provides substantial support for our hypotheses.

With the introduction of ROLE and studies such as this one that demonstrate the utility of leader-level analysis, we believe the field is ripe for new research avenues marked by the blending of structural, organizational, and individual theories of conflict processes. While a similar melding of all three "images" of world politics is well underway in the study of interstate conflict (e.g., Horowitz, Stam, and Ellis 2015), civil war scholarship has to date benefited little from its potential. This fusion of leadership data with other levels of analysis can not only help refine our knowledge of the dynamics and outcomes of contemporary armed conflict but also provide important insights for policy-makers and practitioners. Our study, for example, suggests that young rebel leaders may pose particular risks to international security, and that older ones – even those like Yasser Arafat or Mullah Omar who have "blood on their hands" – are potentially rare "assets" given their greater ability to steer rebel politics toward restraint and negotiation compared to their younger counterparts. Practitioners who wish to minimize terrorism and maximize peace in modern conflicts might do well to tap into their potential, warts and all.

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Supplemental Material

All replication materials for this article are available at JCR's website alongside the published article as well as on the corresponding author's personal website.

Notes

1. As noted earlier, Abrahms (2018) moves in a related direction and we view his work as complementary, though there are important theoretical and empirical differences from our analysis.
2. Warren Fahmy, "Fraying at the Center: Ideological Disputes Harm the Brotherhood at its Core." *The UCLA Middle Easterner*. December 2, 2016. Available at http://www.middleeasterner.net/blog/2016/12/2/fraying-at-the-center-new-ideological-disputes-harm-the-brotherhood-at-its-core
3. William Drodziak. "For Arafat, Another Escape." Washington Post. September 10, 1993.
4. Jack Anderson and Michael Binstein. "After Plane Crash, A 'New' Arafat." Washington Post. September 9, 1993.
5. Ibid.
6. See f.n. 4.
7. Judith Miller. "Death of a King; Cautious King Took Risks in Straddling Two Worlds." *New York Times*, February 8, 1999.
8. Trudy Rubin. "Four Old Men Hold the Keys in the Mideast." *Baltimore Sun*. May 25, 1994.
9. We show results for agreement, government victory, and rebel victory because those are the three key outcomes in the article. Inactivity results are in the Appendix (Table A1).
10. Besides age, all variables from ROLE are *pre-leadership*. This obviates concerns that they are post-treatment to our primary independent variable.
11. The overwhelming majority (99.2%) of the variable's values lie here.
12. There is a small uptick in the odds of government victory among very old leaders. This may indicate some downside risk for elderly leaders. However, this uptick is limited and not significant when examined with joint hypothesis tests.
13. The additive nature of X^2 allows for the individual test statistics from each two-group comparison to be summed and tested cumulatively with *n-1* degrees of freedom (where *n* is the number of groups).
14. Leader experience also eases concerns that older leaders in the sample simply represent "better" or more restrained younger leaders who thus survived over time, while their more impulsive and unsuccessful peers exited the dataset.

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