Undergraduate Statistics Research Project Competition (USRESP)

THE HALO EFFECT IN POLITICS:

The association between appearance and political success of leaders after a coup d'état

June 5, 2017

Abstract

Previous research has shown that good looks, particularly being deemed attractive or competent-looking, can provide an electoral advantage. There is also evidence to support the notion that more dominant looks are associated with military success. To date, there has been little research into the effect of looks on political leadership success in a non-democratic setting. This project explores the effect of facial attractiveness and dominance on the political success of leaders after leading a successful coup d'état. We examine a comprehensive set of coup d'états from 1946 to 2013. Attractiveness and dominance ratings are created via surveys, as in previous research, but with a novel way to control for the potential bias arising from respondent characteristics. Defining political success as taking executive power, longer time-to-office exit, and avoiding constraint on executive power, we find that both dominant and attractive facial features provide distinct advantages for leaders.

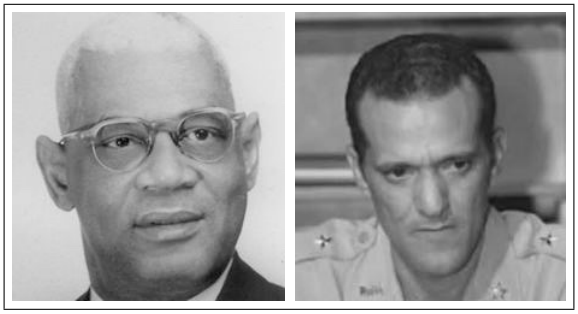
1 Introduction

After a coup d'état, a new leader must be put into office to succeed the old. This is often the coup leader themselves. Once in power, some former coup leaders stay in power for a matter of days while others stay in power for many years. Some leaders are able to seize absolute control of executive power while others have their power checked by institutions. Considering these three facets of leadership success (seizing, keeping, and avoiding constraints on power) what makes some leaders of coup d'états more successful than others?

The question of which traits are correlated with successful leadership is perhaps as old as social stratification itself. Machiavelli posed the question as a trade-off between fear and love. "[M]en love at their own free will, but fear at the will of the prince, and [...] a wise prince must rely on what is in his power and not on what is in the power of others, and he must only trouble himself to avoid incurring hatred" (Machiavelli and Wootton, 1995). While fear and love may be at the root of the dilemma there are also less philosophical explanations.

One of the keys to an autocrat's sustained hold on executive power is the cooperation with a loyal and stable institution (Gandhi and Przeworski, 2007). In the case of coup leaders, this may be the military or a partisan institution. Considering the difference between two Haitian leaders of successful coup d'états, General Léon Cantave and Raoul Cédras (Figure 1), the leaders' executive longevity corresponded to their ability to consolidate power within the elite, win over the public and stabilize institutions.

Figure 1: Léon Cantave (left) and Raoul Cédras (right)



In 1957, General Cantave replaced ousted leader Sylvain Franck serving as the head of state for just five days until he relinquished power to an Executive Council of Government comprised of representatives "designed to reflect a consensus inside the Haitian political class" (Avril, 1999). Within a month, the council began to collapse when François Duvalier withdrew his representatives. Cantave attempted to find a solution to the dissolving Council through the Supreme Court, but it sided with the continued executive power of the remaining Council members. Attempting to preserve their power, the Council dismissed the general and replaced him with Colonel Pierre Armand. Ignoring the dismissal, Cantave declared the Executive Council dissolved. Cantave, presiding over a divided military in a tenuous political situation, again held executive office. As the country sunk into chaos within the next five days, mobs formed and Cantave met with the Presidential candidates where they quickly decided that the charismatic Daniel Fignolé would serve as provisional President (Avril, 1999).

Thirty-four years later, in 1991, General Raoul Cédras ousted newly elected Jean Bertrand Aristide. During the first weeks of the democratic administration, Aristide made several moves that minimized the power of the army. The army, led by General Cédras, quickly reacted to being cut out of the picture with a coup. General Cédras became the de facto leader of the country for three years. With the military united behind him to legitimize his rule, Cédras was able to stay in power despite foreign and domestic accusations of human rights abuses (De Briffault, 2006). In these cases, the added legitimacy of leadership through the support of institutions has a clear impact on clinging to power, but why are some leaders able to convince the military, political leadership and the general public that they are the right individual for the job? What makes one coup leader more acceptable than another? We conjecture that acceptability of a leader to institutional inner circles is associated with the looks of a leader: their attractiveness and dominance.

2 Background

To contextualize this project we first need to discuss the multifaceted background to our research questions. We draw on previous research to understand how attractiveness and dominance can be measured and what their effects may be. We especially focus on the numerous studies looking at the effect of looks on political leadership. Furthermore, to understand the source of our data, we briefly summarize the coup d'état itself and where and when coups have occurred.

2.1 Attractiveness, Dominance and Perception

"The effects of facial attractiveness are robust and pandemic, extending beyond initial impressions of strangers to actual interactions with those whom people know and observe" (Langlois et al., 2000). Attractiveness is cross-culturally agreed upon and provides a significant advantage in domains of judgment, treatment and behavior. Attractive people are more persuasive, treated better in social interactions and tend to achieve higher occupational success (Langlois et al., 2000).

Simply by examining facial images, there is a general consensus as to who is more socially dominant. For male faces, this corresponds to traits that are deemed more mature and less "childlike" such as a strong jaw and brow (Keating, 1985). While who is considered dominant-looking is generally agreed upon, the effect of dominant looks on treatment and personality is less understood. More research is needed to say whether facial dominance can have an effect as strong as facial attractiveness (Mazur and Mueller, 1996).

2.2 Looks and Political/Military Leadership

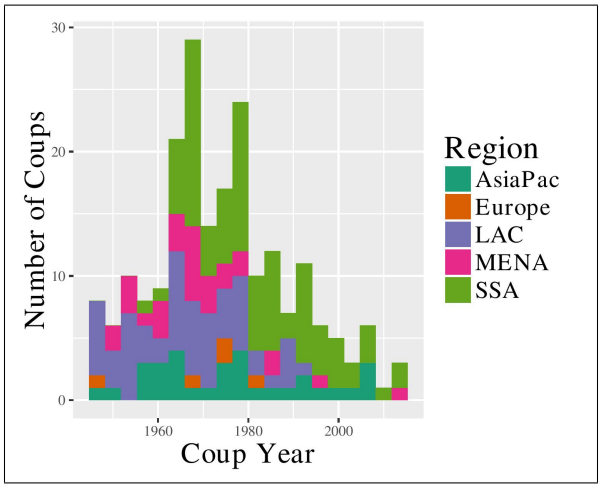
Political science researchers have questioned whether more attractive leaders have more success in gaining political office or are perceived as having better leadership qualities. Previous research has shown that leaders with higher attractiveness ratings and perceived competence have an electoral advantage (Berggren, Jordahl and Poutvaara, 2010; Mattes and Milazzo, 2014; Lawson et al., 2010). This advantage is especially pronounced among candidates with

high media exposure and low information voters (Lenz and Lawson, 2011). Todorov et al. (2005) finds that merely looking at pictures of competing candidates in US congressional elections, and making inferences about their political competence, predicts the outcomes of elections more often than not (71.6% of the time in Senate races and 66.8% of the time in House of Representative races). Atkinson, Enos and Hill (2009) find that in close congressional elections, the effect facial competence can be large enough to swing the outcome one way or the other leading to a higher frequency of high-rated faces in competitive districts. In addition, Little (2014) finds that the effect of higher facial attractiveness ratings on perceived leadership ability is greater during wartime. Research goes beyond political leaders. Those who appear more facially dominant are more likely to rise in the ranks of the military, especially early in their career (Mazur, Mazur and Keating, 1984). Furthermore, Murray (2014) finds that people are more likely to cite physical dominance as an important leadership trait during times of war and that these preferences can be explained through an evolutionary lens.

2.3 Coup d'états

A coup d'état, translated literally from French as a stroke of the state, is defined as a "seizure of power by a group using the permanent employees of the state [...] to capture and paralyze the nerve ends of continuing government" (Bogdanor, 1987). It is distinctly different from a revolution through its aim for one ruling group to simply supplant another rather than disrupt the social and political structure of the state (Bogdanor, 1987). In this paper, we examine the success of leaders who have led a coup d'état that was successful in replacing the previous regime. Between 1946 and 2013, there have been about two hundred successful coup d'états. This includes eighty in Sub Saharan Africa (SSA), fifty-nine in Latin America/Caribbean (LAC), twenty-nine in the Asia/Pacific region (AsiaPac), twenty-eight in the Middle East/North Africa (MENA) and four in Europe. Figure 2 shows the distribution of coups used for our analysis by year and region.

Figure 2: Coups by Region and Year



From Figure 2, we can see the number of coup d'états peaked in frequency in the 1970's.

During the earlier years, between 1930 and 1980, coup d'états occurred with greater frequency in the MENA and LAC regions of the world. Beginning in the 1970's they began to skew more towards SSA. Coups in the AsiaPac region, though less frequent, happened at a relative constant rate throughout the study range. In Europe, coups were infrequent and none were observed after the early 1980's.

The coup d'état is considered a rare event regardless of region. It is outside the norm of functioning politics, an exception to the agreed upon rules. "[T]he capacity to make coups is both enabled and constrained by the scarcity of these events, and the effectiveness of coups is exposed to the attrition that comes with frequent use" (Bartelson, 1997). In order for coup leaders to successfully make this transgression against agreed upon norms, a change in leadership must be perceived as sufficiently urgent and necessary within the public and relevant political or military institutions.

3 Data and Methods

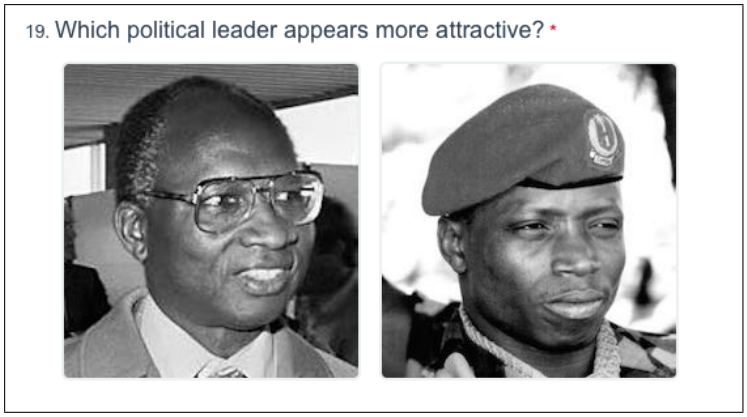
Our main data set is comprised of a row for each year (or partial year) in office following 200 successful coup d'états. Whether or not a leader takes power after leading a successful coup, they will have at least one row in the data set, one leader-year so to speak. There are three main response variables: taking office, time in office and level of executive constraint, as well as various control variables. These response variables and control variables are discussed in depth in Sections 3.3 and 3.4, respectively. Many of our variables are time-varying in nature and this is captured in the panel aspect of the data. That is, each row represents a leader-year as opposed to a leader. To model whether a leader takes power, we use a subset of this panel data set containing only the first row associated with each leader (the leader-year associated with the documented year the coup d'état took place). We also have two secondary data sets containing the raw data on responses from the attractiveness and dominance surveys (detailed in Section 3.1), respectively. Section 3.2 explains how these secondary data sets are used to refine our measures for attractiveness and dominance.

3.1 Survey Collection and Metrics for Attractiveness/Dominance

In order to obtain a metric for facial attractiveness and dominance, we employ surveys using Amazon Mechanical Turk (MTurk). MTurk is an Internet marketplace used to crowdsource "Human Intelligence Tasks" or HITs. We set up 20 HITs for our attractiveness surveys and 20 HITs for our dominance surveys. The HIT included a link to a survey. Each survey had approximately 100 respondents. Using these surveys, we generate two types of metrics for attractiveness/dominance: a *win score* and an *average rating*.

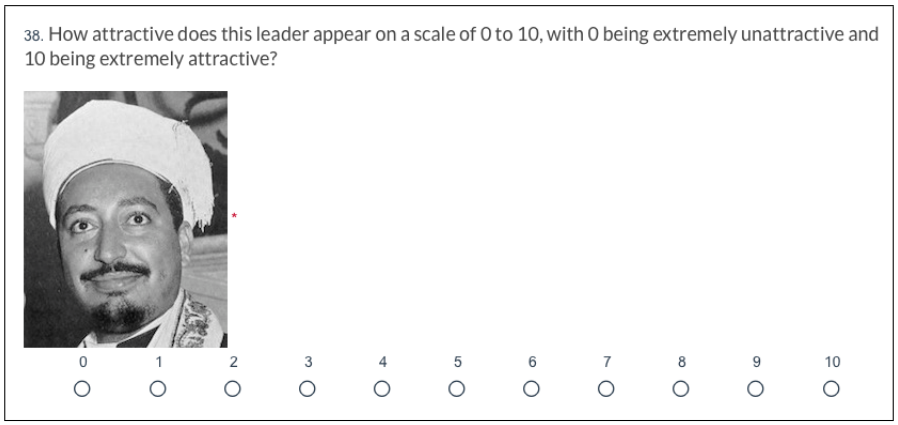
The win score for attractiveness and dominance over the corresponding incumbent is obtained by asking respondents to choose the more attractive (or dominant) looking political leader. Figure 3 shows an example survey question for attractiveness win score. For dominance, the set-up is identical, but poses the question "Which leader appears more dominant?".

Figure 3: Example Survey Question for Win Score



The average rating is generated by asking respondents to rate a leader based on their attractiveness/dominance on a scale of 0 to 10. Figure 4 shows how the question appears in the survey for attractiveness. Again, the dominance survey maintains the same format with the question "How dominant does this leader appear on a scale of 0 to 10, with 0 being extremely non dominant and 10 being extremely dominant?"

Figure 4: Example Survey Question for Attractiveness Rating

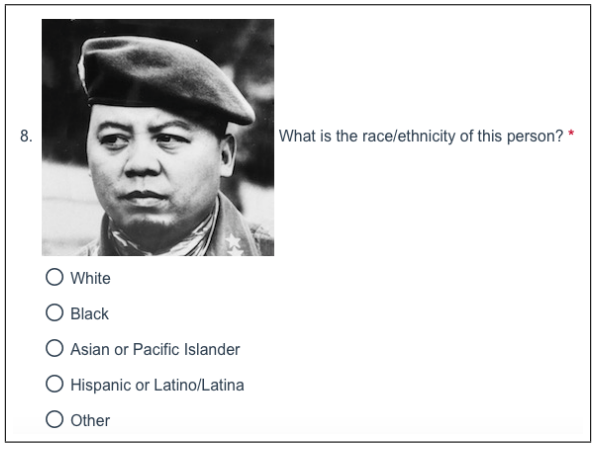


This leaves us with the two measurement types for attractiveness and dominance: 1. the proportion of attractiveness/dominance wins over total survey contests (win score) and 2. an average of the ratings given on a 0 to 10 scale for attractiveness/dominance. We also calculate a net rating (the rating given to the incumbent subtracted from the rating given to the coup leader) in order to identify unreliable MTurk respondents. Respondents who, in more than 50% of instances, picked one leader as the winner of a given contest, but then rated that leader lower than their competitor were excluded from the data set prior to generating the attractiveness and dominance ratings. After excluding these dubious respondents we see a high correlation between a leader's win score and their net rating, lending confidence to the ratings given by our survey respondents. In addition, survey respondents were also asked to volunteer some general demographic information such as race/ethnicity, age and gender. The importance of the responses to these questions is detailed in Section 3.2.

3.2 Random Effects Models and Accounting for Ratings Bias

One concern that arises from using a survey tool through Amazon Mechanical Turk is the potential presence of biases. We take several steps to mitigate such biases. To start, as explained in Section 3.1, we exclude survey takers who give contradictory responses more than half the time (giving a higher rating to one leader than their opponent, but then choosing the opponent as the winner in the contest). Excluding these inconsistent respondents does not necessarily remove a systematic bias (since the order in which pictures appear is randomized), but it does reduce noise in our measures. Moreover, other factors that have nothing to do with the facial looks of a leader may be impacting our measures. Using demographic information volunteered by survey takers and the photo file size (as a proxy for photo quality) we generate a random effects model to predict what attractiveness/dominance score a leader should get based on characteristics unrelated to their looks. The predictors in this model include: leader race and whether it matches that of the survey participant, the age and gender of the participant, the quality of the photo available for the survey, and the random effects component for respondents, i.e., the amount of variation inherently attributable to the respondent. By including the random effects in our model, we can capture how harsh (or lenient) a given participant was when rating leaders. We determine (perceived) leader race using another survey which asks respondents to identify the race/ethnicity of the leaders using the same photos from our attractiveness and dominance surveys (Figure 5). Using the most popular response (the mode), we created a variable capturing perceived race/ethnicity of each leader.

Figure 5: Example Question - Race Survey



Most of the qualities included in the random effects model turn out to be statistically significant predictors of the leader rating although the model overall has a very low R-squared value (0.6%) suggesting that other factors better explain the leaders' scores. We feel that it is reasonable to assume that the remaining driver of the leader ratings is their "intrinsic" facial attractiveness/dominance. We thus calculate the residuals between the observed rating given by a survey participant and the rating that our random effects model predicts. These residuals are then averaged for each leader. More positive residual scores suggest a higher attractiveness/dominance rating irrespective of participant characteristics, photo quality, etc., and more negative residual scores suggest lower attractiveness/dominance.

The average *raw* ratings from survey takers and the average *residual* ratings that adjust for respondent characteristics and photo quality are highly correlated in the case of both attractiveness and dominance. Nevertheless, we feel that it is advantageous to "model out" factors unrelated to a leader's attractiveness/dominance. Although our subsequent results do not change dramatically, using the residual metrics helps ensure that the ratings received by leaders are not primarily due to biases introduced by survey-takers.

3.3 Response Variables

Our three main response variables used to measure political leadership success are: (1) Taking power after a coup d'état, (2) Time in office, and (3) Executive constraints on power. For the 200 coups in our data, 20 leaders fail to take power. Time in office is measured in years in order to perform a time varying analysis using controls considered on a yearly basis (e.g., Real GDP per capita). Duration information was collected from rulers.org. Lastly, executive constraints is a measure of the amount of constraint on executive power on a scale of 1 to 7 in the Polity IV data set (Marshall, Gurr and Jaggers, 2012). Because there are very few leaders who have constraints above 3, we consolidate values to a 1 to 3 scale, with 3 including all original executive constraint values from 3 to 7. This produces a scale where 1 corresponds to "Unlimited Authority", 3 corresponds to "Slight to Moderate Limitation on Executive Authority" and 2 is an intermediate category.

3.4 Controls

Having generated a time varying data set of explanatory and response variables, we then merged this data with several other data sets in order to gather necessary control variables. One of these controls is the previous regime type with categories Parliamentary Democracy, Mixed Democracy, Presidential Democracy, Civilian Dictatorship, Military Dictatorship and Royal Dictatorship. This is a particularly important political control. For example, we expect that "[s]omeone who stages a coup in a democracy should have less legitimacy and face greater challenges to repressing opposition than someone who overthrows a dictatorship" (Roberts and Mueller, N.d.). Gandhi and Przeworski (2007) found that political institutions such as parties had a significant effect on an autocrat's time in office so we also include a categorical variable for number of political parties (no parties, one party or multiple parties) from Cheibub, Gandhi and Vreeland (2010). Beyond political variables we include a dummy variable for Sub Saharan Africa and a binary variable addressing whether the coup d'état occurred in the post Cold War era. Post Cold war is included "because military coup leaders faced greater pressure to leave office once proxy battles ended and great powers stopped abetting allies in developing countries" (Roberts and Mueller, N.d.). Lastly, we included four economic variables: economic growth and real GDP per capita from Gleditsch (2002), oil and gas per capita from Ross (2008), and foreign aid per capita from Roodman (2014).

3.5 Models for Analysis

To address the three types of leadership success, we use three different models for our analysis: Firth Logistic Regression, Cox Proportional Hazards Model and Ordinal Logistic Regression.

3.5.1 Logistic Regression for Low Event Counts

To determine whether more facially attractive or dominant leaders are more likely to take office we use logistic regression. The maximum likelihood estimators obtained from logistic regression are asymptotically unbiased, but for low event counts, they can be substantially biased (Firth, 1993). This is an issue of relevance here since, in our data, only 20 leaders fail to take power. Moreover, the bias associated with logistic regression is away from 0. "Bias correction, therefore, requires some degree of 'shrinkage' of $\hat{\beta}$ towards this point" (Firth, 1993). We thus employ a penalized likelihood approach.

There are many commonly used options for the penalty function: the lasso and ridge methods penalize the objective function based on the size of the parameters (their absolute value and squared value, respectively). Firth logistic regression, on the other hand, invokes a Bayesian framework more explicitly by choosing the penalty function to be Jeffrey's invariant prior (Rainey, 2016). Jeffrey's prior is defined as the square root of the determinant of Fisher's Information matrix.

Firth logistic regression effectively corrects for bias associated with low event counts. It also controls for bias due to separation, that is, combinations of covariate values associated with only success or failure (Heinze and Schemper, 2002). Monte Carlo simulations have shown that, for small event counts and instances of separation, Firth logistic regression outperforms traditional maximum likelihood estimation (Heinze and Schemper, 2002). We thus find it prudent to use Firth logistic regression to explore the effects of facial attractiveness and dominance on the binary variable *TakePower*, fearing that the use of standard maximum likelihood estimation will be subject to a non-trivial amount of bias away from 0.

3.5.2 Cox Proportional Hazards Model and Competing Risks

To examine the effect of attractiveness and dominance on time in office we employ survival analytic techniques (i.e., time-to-event modeling). Using Cox Proportional Hazards (PH) models we are able to take advantage of the time-varying nature of our control variables. In addition, we can account for the 11 instances of right-censoring (leaders for whom we do not know the year of exit from office because they are still in power). We estimate the Cox PH models using only data on leaders for whom we can define a leadership duration, that is, only considering leaders who were successful in taking power after a coup (this excludes 20 leaders). Survival analytic techniques are widely used in medical research, and have also been used to answer similar political science research questions (Magaloni, 2008).

While we are mainly concerned with the failure associated with removal from office, time in office may also end due to the death of the leader. If we assume leader death is unrelated to the risk of removal from office then we can simply treat leader death as a right-censored observation. However, if there is a relationship between leader death and removal from office then leader death is considered a *competing risk*.

Take, for instance, the example of General Sani Abacha (Figure 6). After leading a coup d'état in 1993, Abacha became Nigeria's de facto leader. Abacha long promised to return the state to civilian rule, but then proceeded to ruthlessly detain and assassinate those who made presidential bids. He ousted the elite political class before they could mobilize against him and surrounded himself with sycophants ensuring only those in his good graces won election

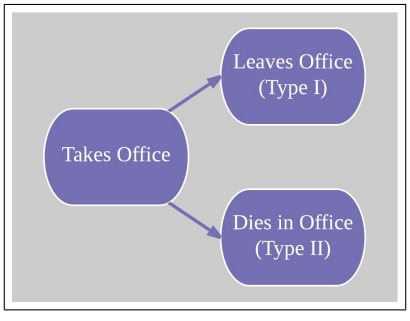
to office. He exercised his overreaching control on Nigeria's five political parties forcing them to nominate him as the sole presidential candidate. In his campaign for presidency he founded the organization Youths Earnestly Ask for Abacha (YEAA) which he used to organize political rallies in his favor (Ogbondah, 2000).

Figure 6: Sani Abacha

By 1998 Abacha's reign was colored by corruption and human rights abuses. It was then that the 54 year old leader died of what was reported to be a heart attack. He was buried the next day without an autopsy. Rumors circulated that he had been poisoned while in the company of three prostitutes. US aides stated that there is indeed some evidence to support the claim that he was executed extra judicially by means of poison although these claims cannot be confirmed definitively (Weiner, 1998). If Abacha was indeed removed from office by way of poison it follows that he may also have been in imminent danger of being ousted from office by less violent means. The risk of death and removal from office, at least in this case, are not unrelated, making death a competing risk.

Considering death as a competing risk introduces two failure types. Let Type I correspond to failure by removal from office and Type II correspond to failure by death while in office. Instead of a question that exists in two states (in office and out of office) we now have three states (in office, out of office and dead) (see Figure 7).

Figure 7: Depiction of Competing Risks



Cox PH models can accommodate competing risks: by fitting Cox PH models for each respective failure type, we estimate the instantaneous effects on hazard for each parameter treating the other failure type as right-censored. We are able to ignore the other failure type when estimating hazard as it is an instantaneous quantity dependent only on the state from

which it originates (being in office) and the hazardous event (leaving office or dying in office). The hazard rate is an "instantaneous quantity dependent only on the set of subjects who are at risk at a given moment; if someone is not at risk it really does not matter why" (Therneau, Crowson and Atkinson, 2016). When calculating the cumulative incidence of failure (leaving office), however, we need to consider both failure rates simultaneously. To do this, we turn to the Aalen-Johansen estimate, "a matrix version of the Kaplan-Meier estimator, which can be used to estimate the transition probability matrix of a Markov process with a finite number of states" (Borgan, 2005).

The Aalen-Johanson estimate can be used to plot and compare the estimated survival for leaders, considering death as right-censored or as a competing risk. If death is indeed a notable competing risk, the estimates which consider instances of death in office as right-censored will overestimate survival.

3.5.3 Ordinal Logistic Regression

To determine whether attractiveness or dominance have an effect on executive constraints we again use a logistic regression, but this time it is designed for an ordinal rather than binary response variable. Since we consolidated the executive constraints variable to scale from 1 to 3, there are no constraint values with a low count; thus, the bias discussed in Section 3.5.1 is not a concern. Coefficients from the ordinal logistic regression models represent the increase in the log of the odds, corresponding to a unit increase in each predictor, for a higher level of constraint on the leader.

The most commonly used ordinal logistic regression model requires an assumption that the change in log odds associated with each coefficient is proportional (e.g., the log odds of an executive constraint of two compared to one is the same as the log odds of an executive constraint of three compared to two with all predictors held constant) (Harrell, 2001). The implementation of this model in R returns the log of the odds ratio (for each covariate) associated with a one unit increase in the executive constraint. Importantly, since our executive constraint variable is time-varying, we include as a predictor the lagged executive constraint value (treated as a factor).

4 Results

Our results consist of a series of models using attractiveness/dominance to explain the three response variables: taking power after a coup, time spent in office for those leaders who are successful in taking power, and constraints on executive power for coup leaders in office.

4.1 Taking Power

Table 1 shows the log of the odds ratios of coming into power for a variety of Firth logistic regression models with standard errors in parentheses. According to our findings, having a higher win score and attractiveness rating corresponds to lower odds of taking power, but these results do not attain statistical significance. What does seem to have a significant effect on taking power is the country's GDP per capita. There is also some evidence that

aid per capita impacts the log odds of taking power. Coup leaders are more likely to take power in countries that have a higher GDP per capita and receive more aid per capita.

We also explore the effect of facial dominance on taking power. Performing similar Firth logistic models we generate Table 2. The results here are somewhat surprising. Leaders who have ousted an *incumbent* that is more dominant looking are more likely to take power. However, the effect of *coup leader* dominance by both win score and adjusted rating does not have a significant effect on the log odds of taking power. Similar to the results presented in Table 1, the models in Table 2 show positive and somewhat significant coefficients for GDP per capita and aid per capita. While the attractiveness of both leader and incumbent does not have an effect on the odds of taking power, higher dominance of an incumbent leader is associated with higher odds of taking power for the incoming coup leader.

Table 1: Firth Logistic Regression for Taking Power - Attractiveness

	Dependent variable:							
	TakePower							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Attractiveness Win Score	−0.257	−1.336	−1.432	−1.741				
	(1.173)	(1.393)	(1.402)	(1.429)				
Leader Attractiveness					−0.060	−0.657	−0.623	−0.712
					(0.357)	(0.422)	(0.423)	(0.435)
Incumbent Attractiveness					0.002	0.079	0.123	0.154
					(0.369)	(0.438)	(0.439)	(0.432)
Post Cold War	0.659	0.525	0.415	0.300	0.677	0.392	0.302	0.173
	(0.713)	(0.727)	(1.730)	(1.108)	(0.708)	(0.727)	(0.730)	(0.736)
Real GDP per Capita (logged)	0.472	0.632	0.944	1.072**	0.482	0.553	0.844*	0.980*
	(0.324)	(0.454)	(0.487)	(0.521)	(0.327)	(0.453)	(0.487)	(0.522)
Oil/Gas per Capita (logged)		−0.045	−0.007	0.021		−0.024	0.009	0.038
		(0.167)	(0.171)	(0.176)		(0.169)	(0.173)	(0.180)
Aid per Capita (logged)		0.487*	0.406	0.429		0.485*	0.399	0.434
		(0.256)	(0.262)	(0.262)		(0.256)	(0.260)	(0.263)
Presidential Democracy				−1.091				−1.165
				(0.748)				(0.748)
Sub Saharan Africa			1.102	1.080			1.026	0.985
			(0.682)	(0.688)			(0.683)	(0.691)
Constant	−1.536	−3.823	−6.268	−6.987*	−1.511	−3.881	−6.163	−7.121*
	(2.414)	(3.530)	(3.799)	(4.599)	(2.384)	(3.389)	(3.679)	(3.878)
Observations	197	165	165	165	195	164	164	161
Likelihood Ratio Test	2.761	6.444	9.024	10.7643	2.746	7.996	9.896	12.003
Note:								*p<0.1; **p<0.05; ***p<0.01

Table 2: Firth Logistic Regression for Taking Power - Dominance

	Dependent variable:							
	TakePower							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dominance Win Score	−0.495	−2.557	−2.421	−2.223				
	(1.288)	(1.599)	(1.613)	(1.623)				
Leader Dominance					−0.022	0.437	0.385	0.460
					(2.477)	(0.395)	(0.399)	(0.413)
Incumbent Dominance					0.964***	1.332***	1.298***	1.250***
					(0.346)	(0.434)	(0.436)	(0.443)
Post Cold War	0.672	0.535	0.442	0.351	0.964	1.211	1.135	1.022
	(0.711)	(0.734)	(0.733)	(0.735)	(0.740)	(0.865)	(0.857)	(0.849)
Real GDP per Capita (logged)	0.472	0.649	0.920*	1.017*	0.434	0.530	0.718	0.762
	(0.325)	(0.734)	(0.503)	(0.527)	(0.338)	(0.491)	(0.518)	(0.532)
Oil/Gas per Capita (logged)		−0.025	0.017	0.037		0.004	0.043	0.079
		(0.174)	(0.180)	(0.182)		(0.176)	(0.181)	(0.185)
Aid per Capita (logged)		0.484*	0.391	0.401		0.574**	0.483	0.476
		(0.265)	(0.272)	(0.271)		(0.291)	(0.299)	(0.293)
Presidential Democracy				−0.753				−0.805
				(0.741)				(0.783)
Sub Saharan Africa			0.971	1.038			0.822	0.814
			(0.691)	(0.813)			(0.735)	(0.734)
Constant	−0.100	−3.177	−5.366	−6.139	0.516	−3.773	−5.224	−5.120
	(2.661)	(3.701)	(3.978)	(4.102)	(2.678)	(3.884)	(4.105)	(5.362)
Observations	197	165	165	161	195	164	164	161
Likelihood Ratio Test	2.844	8.079	10.143	11.030	9.985	18.892	19.983	20.417

Note: *p<0.1; **p<0.05; ***p<0.01

4.2 Time in Office

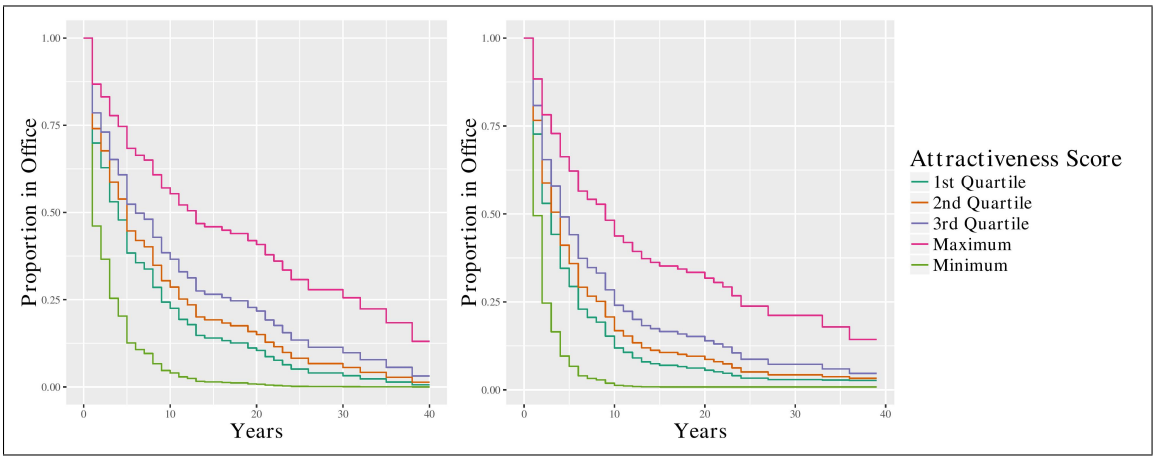
To explore whether attractiveness and dominance have an effect on time spent in office we decide to use ratings rather than win scores to quantify attractiveness/dominance since we believe that, as time goes on, the looks of the incumbent will become far less salient.

Table 3 shows the results of our Cox Proportional Hazards models for time in office based on attractiveness (still modeling out survey-taker characteristics and photo quality) and other control variables. The coefficients shown represent the log of the hazard ratio associated with a 1-unit increase in each predictor (standard error estimates shown in parentheses). In each model we find both leader attractiveness and incumbent attractiveness to significantly decrease hazard. The effect of leader attractiveness is larger in magnitude and significance than the effect of incumbent attractiveness. More attractive leaders tend to last longer in office (and it helps if the ousted incumbent is attractive too). Some of the controls included also had a significant effect on hazard of exit. A previous regime of a civilian dictatorship and more economic growth tend to decrease the hazard of leaving office, and ruling in a country with multiple political parties increases the hazard of leaving office.

The models in Table 3 treat death as right-censored. Table 4 shows the coefficients for the hazard of leaving office for the same models if we treat death as a competing risk. We see a slight decrease in the magnitude of the coefficients for leader attractiveness in each model, but the significance holds. some coefficients decreased in magnitude (e.g., Sub Saharan Africa, Presidential Democracy, Royal Dictatorship and One Political Party) while others increased in magnitude (e.g., Incumbent Attractiveness, Civilian Dictatorship, and Multiple Political Parties). In general, the direction and significance of relationships between the covariates and hazard for office exit remained essentially the same in Tables 3 and 4.

Figure 8 shows the visual difference in predicted time in office between Tables 3 and 4. Both plots (left and right) show the predicted survival for leaders with varying adjusted attractiveness scores (minimum, first quartile, second quartile, third quartile, maximum) with all other predictors held at either the mean for continuous variables or the most typical value for categorical variables. The plot on the left shows survival estimates based on Table 3 (using the right-censoring method) and the plot on the right shows survival estimates based on Table 4 (using the competing risks method). We can see that the curves on the left are slightly higher than those on the right suggesting that censoring deaths in office is over-estimating time in office. Regardless of the hazard estimation method, both show a substantial separation between the curves illustrating the high level of significance we observed for leader attractiveness.

Figure 8: Time in Office by Attractiveness - Censoring (left) vs Competing Risks (right)



If we consider the effect of dominance ratings on time in office we can again use Cox PH models with leader and incumbent dominance as predictors. Table 5 shows the results of these models. Each model shows a decrease in hazard for removal from office for leaders with higher facial dominance. However, unlike our attractiveness measure, these dominance measures are not statistically significant. Moreover, both growth and multiple political parties show similar effects as in our attractiveness models. All other covariates show no significant effect. Due to lack of significance between dominance and hazard of office exit, we chose not to present the results for the competing risks framework.

Table 3: Hazard for Exit from Office - Attractiveness (Censoring)

	Dependent variable:			
	Years			
	(1)	(2)	(3)	(4)
Leader Attractiveness	−0.495***	−0.498***	−0.599***	−0.605***
	(0.153)	(0.150)	(0.149)	(0.149)
Incumbent Attractiveness	−0.207	−0.392***	−0.383**	−0.380**
	(0.145)	(0.147)	(0.159)	(0.158)
Sub Saharan Africa				−0.158
				(0.261)
Mixed Democracy			−0.732	−0.769
			(0.661)	(0.663)
Presidential Democracy			0.452	0.413
			(0.374)	(0.381)
Civilian Dictatorship			−0.601*	−0.635*
			(0.339)	(0.344)
Military Dictatorship			0.375	0.343
			(0.326)	(0.330)
Royal Dictatorship			−0.271	−0.295
			(0.544)	(0.545)
One Political Party		−0.712	−0.651	−0.633
		(0.455)	(0.455)	(0.456)
Multiple Political Parties		1.143***	1.150***	1.123***
		(0.222)	(0.230)	(0.234)
Post Cold War	0.243	−0.186	−0.225	−0.203
	(0.191)	(0.210)	(0.216)	(0.219)
Growth	−0.021**	−0.019**	−0.019**	−0.019**
	(0.008)	(0.008)	(0.008)	(0.009)
Real GDP per Capita (logged)	0.001	−0.196	−0.199	−0.253
	(0.132)	(0.141)	(0.152)	(0.177)
Oil/Gas per Capita (logged)	−0.038	0.033	0.030	0.027
	(0.047)	(0.050)	(0.051)	(0.051)
Aid per Capita (logged)	−0.104	0.005	0.074	0.088
	(0.072)	(0.078)	(0.084)	(0.087)
Observations	1,206	1,130	1,091	1,091
R^2	0.022	0.053	0.071	0.071
Log Likelihood	−543.661	−502.103	−489.042	−488.858
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 4: Hazard for Exit from Office - Attractiveness (Competing Risks)

	Dependent variable:			
	Years			
	(1)	(2)	(3)	(4)
Leader Attractiveness	−0.442***	−0.452***	−0.541***	−0.542***
	(0.159)	(0.155)	(0.153)	(0.154)
Incumbent Attractiveness	−0.259*	−0.426***	−0.422**	−0.421**
	(0.151)	(0.153)	(0.164)	(0.164)
Sub Saharan Africa				−0.037
				(0.271)
Mixed Democracy			−1.177	−1.185
			(0.779)	(0.782)
Presidential Democracy			0.369	0.359
			(0.379)	(0.386)
Civilian Dictatorship			−0.737**	−0.745**
			(0.347)	(0.352)
Military Dictatorship			0.264	0.256
			(0.329)	(0.333)
Royal Dictatorship			−0.106	−0.112
			(0.540)	(0.542)
One Political Party		−0.654	−0.587	−0.583
		(0.490)	(0.490)	(0.492)
Multiple Political Parties		1.254***	1.304***	1.297***
		(0.230)	(0.236)	(0.241)
Post Cold War	0.293	−0.176	−0.200	−0.195
	(0.197)	(0.219)	(0.224)	(0.227)
Growth	−0.020**	−0.019**	−0.018**	−0.018**
	(0.009)	(0.009)	(0.009)	(0.009)
Real GDP per Capita (logged)	0.054	−0.146	−0.187	−0.200
	(0.136)	(0.146)	(0.156)	(0.182)
Oil/Gas per Capita (logged)	−0.043	0.032	0.025	0.025
	(0.049)	(0.052)	(0.054)	(0.054)
Aid per Capita (logged)	−0.089	0.036	0.106	0.110
	(0.074)	(0.080)	(0.086)	(0.089)
Observations	1,206	1,130	1,091	1,091
R^2	0.018	0.050	0.069	0.069
Log Likelihood	−512.153	−471.083	−458.077	−458.068
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 5: Hazard for Exit from Office - Dominance (Censoring)

	Dependent variable:			
	Years			
	(1)	(2)	(3)	(4)
Leader Dominance	−0.086	−0.025	−0.027	−0.019
	(0.141)	(0.148)	(0.151)	(0.153)
Incumbent Dominance	0.088	0.103	0.093	0.092
	(0.140)	(0.142)	(0.151)	(0.151)
Sub Saharan Africa				−0.137
				(0.261)
Mixed Democracy			−0.489	−0.515
			(0.676)	(0.676)
Presidential Democracy			0.395	0.362
			(0.364)	(0.370)
Civilian Dictatorship			−0.433	−0.463
			(0.336)	(0.341)
Military Dictatorship			0.393	0.370
			(0.332)	(0.334)
Royal Dictatorship			−0.026	−0.047
			(0.533)	(0.535)
One Political Party		−0.542	−0.456	−0.444
		(0.451)	(0.452)	(0.453)
Multiple Political Parties		1.010***	1.025***	1.001***
		(0.219)	(0.230)	(0.234)
Post Cold War	0.277	−0.096	−0.107	−0.091
	(0.191)	(0.211)	(0.217)	(0.219)
Growth	−0.021**	−0.021**	−0.021**	−0.021**
	(0.009)	(0.009)	(0.009)	(0.009)
Real GDP per Capita (logged)	0.042	−0.102	−0.058	−0.104
	(0.134)	(0.140)	(0.155)	(0.179)
Oil/Gas per Capita (logged)	−0.058	−0.016	−0.034	−0.038
	(0.047)	(0.049)	(0.052)	(0.052)
Aid per Capita (logged)	−0.137*	−0.062	−0.021	−0.010
	(0.071)	(0.076)	(0.080)	(0.082)
Observations	1,206	1,130	1,091	1,091
R^2	0.012	0.038	0.050	0.050
Log Likelihood	−549.734	−511.305	−501.474	−501.336

Note: *p<0.1; **p<0.05; ***p<0.01

4.3 Constraints on Executive Power

Table 6 shows the results of the ordinal logistic regression for the effect of attractiveness on executive constraints. The coefficients represent the log of the odds ratio of having higher executive constraints. Leader attractiveness appears to be slightly negatively correlated with the log odds of higher executive constraints. This lends some evidence towards the conclusion that more attractive leaders are able to consolidate more absolute power than less attractive leaders. Because executive constraints tend to stay at the same level from year to year and rarely decrease, the level of executive constraint of the previous year has a large positive coefficient. Multiple political parties also significantly increases the odds of higher level of constraint, along with being post Cold War and a previous regime of presidential democracy. Higher oil and gas per capita is associated with lower odds of high executive constraint.

Table 6: Ordinal Logistic Regression for Executive Constraints - Attractiveness

	Dependent variable:			
	Executive Constraints (1=low to 3=high)			
	(1)	(2)	(3)	(4)
Executive Constraints Lagged = 2	4.014***	3.857***	3.897***	3.960***
	(0.318)	(0.324)	(0.328)	(0.340)
Executive Constraints Lagged = 3	9.935***	9.696***	9.721***	9.639***
	(0.526)	(0.527)	(0.530)	(0.556)
Leader Attractiveness	−0.451*	−0.431*	−0.459**	−0.385
	(0.233)	(0.230)	(0.232)	(0.246)
Incumbent Attractiveness	0.039	−0.061	−0.066	−0.008
	(0.216)	(0.214)	(0.213)	(0.225)
Presidential Democracy		1.030**	0.990**	0.869
		(0.484)	(0.487)	(0.534)
Multiple Political Parties	1.434***	1.669***	1.582***	1.726***
	(0.278)	(0.300)	(0.314)	(0.331)
Sub Saharan Africa			−0.282	−0.234
			(0.308)	(0.369)
Post Cold War	0.879***	0.766***	0.853***	1.023***
	(0.264)	(0.275)	(0.290)	(0.308)
Real GDP per Capita (logged)	−0.069	−0.262*	−0.332*	0.067
	(0.116)	(0.151)	(0.170)	(0.251)
Aid per Capita (logged)				−0.074
				(0.102)
Oil/Gas per Capita (logged)				−0.181**
				(0.071)
Observations	998	960	960	896
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 7 show the results of the ordinal logistic regression with leader and incumbent dominance as predictors. The results are very similar for the lagged executive constraints variables, multiple political parties, post cold war, presidential democracy and oil and gas

per capita. Just as we saw in Table 2, incumbent dominance rather than leader dominance has a significant effect, this time on executive constraint rather than taking power. Incumbent dominance has a positive coefficient suggesting that leaders who oust a more dominant coup leader have higher odds of greater constraint on their power.

Table 7: Ordinal Logistic Regression for Executive Constraints - Dominance

	Dependent variable:			
	Executive Constraints (1=low to 3=high)			
	(1)	(2)	(3)	(4)
Executive Constraints Lagged = 2	3.865***	3.653***	3.660***	3.761***
	(0.312)	(0.323)	(0.324)	(0.339)
Executive Constraints Lagged = 3	9.933***	9.662***	9.664***	9.527***
	(0.528)	(0.530)	(0.531)	(0.559)
Leader Dominance	0.036	0.119	0.135	0.207
	(0.241)	(0.255)	(0.264)	(0.297)
Incumbent Dominance	0.629***	0.674***	0.667***	0.638***
	(0.221)	(0.219)	(0.220)	(0.236)
Presidential Democracy		1.179**	1.162**	0.995*
		(0.475)	(0.479)	(0.529)
Multiple Political Parties	1.305***	1.569***	1.542***	1.673***
	(0.265)	(0.293)	(0.313)	(0.329)
Sub Saharan Africa			−0.080	−0.064
			(0.321)	(0.377)
Post Cold War	1.012***	0.923***	0.944***	1.137***
	(0.268)	(0.283)	(0.296)	(0.315)
Real GDP per Capita (logged)	−0.168	−0.374**	−0.391**	0.044
	(0.123)	(0.157)	(0.173)	(0.248)
Aid per Capita (logged)				−0.083
				(0.099)
Oil/Gas per Capita (logged)				−0.200***
				(0.070)
Observations	998	960	960	896
Note:				*p<0.1; **p<0.05; ***p<0.01

5 Discussion

The results of our analysis show that both attractive and dominant looks have some effect on leadership success. These qualities affect the leaders' odds of taking power after leading a successful coup, the amount of time a leader spends in office, and their ability to avoid constraints on their executive power.

Leaders who oust more dominant-looking incumbents are more likely to take power after leading a successful coup d'état. We were surprised to see that the dominance of the incumbent has a stronger effect on the success of the coup leader than the dominance of the coup

leader themselves. The result goes against what we would expect given the limited literature on the effect of dominant looks. More research is needed into the effects of dominance to explain the underlying mechanism behind these findings. We did not find attractiveness to have a significant effect on taking power although there was a weak trend across models using win-score and adjusted attractiveness scores suggesting that being more attractive was associated with a lower odds of taking power after leading a successful coup d'état. This is contrary to the literature for the effects of attractiveness on taking office democratically. This provides some evidence that the effect of attractive looks on rising to executive office is not independent of the mechanism of gaining power (by overthrowing the state or through democratic election).

After taking power, more attractive leaders are able to stay in power longer, that is, they have lower hazard for removal from office. The effect of attractiveness is highly significant and holds true when treating death as a right-censored event or a competing risk. This finding is supported by the literature and complements previous studies showing that attractive looks provide an advantage in achievement and perceived leadership. While not as strong or as significant as the coup leader attractiveness, we were surprised to again find that the attractiveness of the incumbent had a significant positive association with staying in power. Leaders with more attractive incumbents have significantly lower hazard for removal from office. We did not find dominant looks (of the coup leader or the incumbent) to have an effect on leadership longevity. Comparing the results of the right-censored and competing risks models for attractiveness, we found that considering death as a right-censored event led to an overestimation of time in office. This leads us to believe that risk of death and risk of removal from office are not unrelated events. Covariates in our models affect both risk of death and risk of removal from office. Given our model, leaders who die in office may have been at greater risk to be imminently removed had they survived than those who did not die. These findings raise questions about the relationship between leadership longevity and the manner of removal from office on which future research is needed.

Finally, there is some evidence that more attractive leaders can garner more absolute power while in office by avoiding constraints on executive power. The literature supports that more attractive people are considered more persuasive so this could explain why more attractive leaders tend to avoid checks on their power. We did not find the facial dominance of a coup leader to have a significant effect on executive constraints. However, replacing a more dominant-looking incumbent significantly increases the odds of higher constraint on power. Again, we are surprised to see such a strong effect from incumbent looks, and more research is needed to explain why this might be. To summarize, more attractive leaders consolidate more absolute power, but following a dominant-looking leader has the opposite effect.

Turning back to our original example of the two Haitian leaders, Léon Cantave and Raoul Cédras, we can examine whether their attractiveness scores fit our narrative that more attractive leaders can remain in office longer. General Cantave who lasted just a matter of days had an average rating of 4.99. General Cédras on the other hand had an attractiveness score of 5.4. Perhaps not an extreme difference in attractiveness, but worth considering. The significant effects of both coup leader attractiveness and incumbent dominance are important pieces of a many faceted explanation for why some coup leaders go on to executive power, remain in office and avoid constraints on their executive role.

While the relationship between looks and the success of leaders who come into power after successfully overthrowing the government is clearly complex, our results provide some insight into how these measures may be correlated. Some of these correlations fit into the current understanding of the effect of facial looks, while others are more surprising. The positive effect of attractiveness on leadership success, both staying in power and avoiding constraints on power, complements the literature showing the advantage of attractiveness in democratic settings. Our findings with regards to the significance of incumbent dominance are not as easily supported or interpreted. One explanation could be multicollinearity between incumbent and coup leader dominance ratings. If features from similar ethnicities and time periods are considered more dominant by our survey takers then we would expect incumbents and the coup leaders who ousted them to get similar dominance scores. When we consider leader dominance without adding the incumbent dominance to the model, leader dominance, at least in our Firth logistic regression models, becomes a much more significant predictor. Moreover, we see a lack of significance in the dominance win score predictor casting doubt on any conclusions that having comparatively greater (or lesser) dominance has any effect on taking power. More research on how survey takers perceive dominance, and the effect of previous leadership on current autocratic success could shed some light on this.

6 Conclusion

Previous research has explored the effect of looks on leadership success, but most of these studies have focused on democratically elected leaders making our study of leaders who take power after a coup d'état a novel subject. Using methods such as Firth logistic regression, Cox Proportional Hazards models and ordinal logistic regression to consider the outcomes of leaders of over 200 successful coups from 1946 to 2013, we find that both dominance and attractiveness have distinct effects on leadership outcome. Ratings for facial attractiveness and dominance, determined through surveys and random effects linear models, are significant predictors for taking power after a successful coup d'état, staying in power and avoiding constraints on power. Findings that more attractive leaders tend to stay in power longer and consolidate more absolute power are supported by previous research, but more research is needed to understand the strong effect of incumbent dominance on odds of taking power and avoiding constraints on power. According to our results, while the relationship between looks and leadership success may be more complicated for autocrats than democratically elected officials, the significant effect of facial looks certainly extends beyond the democratic setting. There is assuredly a basis for extending the study of looks and leadership outside the democratic realm.

References

Atkinson, Matthew D., Ryan D. Enos and Seth J. Hill. 2009. "Candidate Faces and Election Outcomes: Is the FaceVote Correlation Caused by Candidate Selection?" *Quarterly Journal of Political Science* 4(3):229–249.
URL: *http://dx.doi.org/10.1561/100.00008062*

Avril, Prosper. 1999. *From glory to disgrace: The Haitian army, 1804-1994*. Parkland, Fla. USA: Universal Publishers.

Bartelson, Jens. 1997. "Making Exceptions: Some Remarks on the Concept of Coup d'état and Its History." *Political Theory* 25(3):323–346.
URL: *http://www.jstor.org/stable/191983*

Berggren, Niclas, Henrik Jordahl and Panu Poutvaara. 2010. "The looks of a winner: Beauty and electoral success." *Journal of Public Economics* 94:8–15.

Bogdanor, V., ed. 1987. *The Blackwell Encyclopaedia of Political Institutions*. Blackwell reference Blackwell Reference.

Borgan, Ørnulf. 2005. *AalenJohansen Estimator*. John Wiley & Sons, Ltd.
URL: *http://dx.doi.org/10.1002/0470011815.b2a11001*

Cheibub, J.A., J. Gandhi and J.R. Vreeland. 2010. "Democracy and dictatorship revisited." *Public Choice* 143(1):67–101.

De Briffault, Christian E. 2006. "Cédras, Raoul 1950-." *Encyclopedia of Modern Dictators* pp. 51 – 53.

Firth, David. 1993. "Bias Reduction of Maximum Likelihood Estimates." *Biometrika* 80(1):27–38.
URL: *http://www.jstor.org/stable/2336755*

Gandhi, Jennifer and Adam Przeworski. 2007. "Authoritarian Institutions and the Survival of Autocrats." *Comparative Political Studies* 40(11):1–23.

Gleditsch, Kristian Skrede. 2002. "Expanded Trade and GDP Data." *Journal of Conflict Resolution* 46(5):712–724.

Harrell, F.E. 2001. *Regression Modeling Strategies: With Applications to Linear Models, Logistic Regression, and Survival Analysis*. Graduate Texts in Mathematics Springer.
URL: *https://books.google.com/books?id=kfHrF-bVcvQC*

Heinze, Georg and Michael Schemper. 2002. "A solution to the problem of separation in logistic regression." *Statistics in Medicine* 21(16):2409–2419.

Keating, Caroline F. 1985. "Gender and the Physiognomy of Dominance and Attractiveness." *Social Psychology Quarterly* 48(1):61–70.
URL: *http://www.jstor.org/stable/3033782*

Langlois, Judith H., Lisa Kalakanis, Adam J. Rubenstein, Andrea Larson, Monica Hallam and Monica Smoot. 2000. "Maxims or Myths of Beauty? A Meta-Analytic and Theoretical Review." *Psychological Bulletin* 126:390–423.

Lawson, Chappel, Gabriel S. Lenz, Andy Baker and Michael Myers. 2010. "Looking Like a Winner: Candidate Appearance and Electoral Success in New Democracies." *World Politics* 62:561–593.

Lenz, Gabriel S. and Chappell Lawson. 2011. "Looking the Part: Television Leads Less Informed Citizens to Vote Based on Candidates Appearance." *American Journal of Political Science* 55(3):574–589.
URL: *http://dx.doi.org/10.1111/j.1540-5907.2011.00511.x*

Little, Anthony C. 2014. "Facial appearance and leader choice in different contexts: Evidence for task contingent selection based on implicit and learned face-behaviour/face-ability associations." *The Leadership Quarterly* 25:865–874.

Machiavelli, N. and D. Wootton. 1995. *The Prince*. Indialis: Hackett Pub. Co.

Magaloni, Beatriz. 2008. "Credible Power-Sharing and the Longevity of Authoritarian Rule." *Comparative Political Studies* 41:715–741.

Marshall, Monty G., Ted Robert Gurr and Keith Jaggers. 2012. "Polity IV Project Data Users' Manual.".
URL: *http://www.systemicpeace.org/inscr/p4manualv2012.pdf*

Mattes, Kyle and Caitlin Milazzo. 2014. "Pretty faces, marginal races: Predicting election outcomes using trait assessments of British parliamentary candidates." *Electoral Studies* 34:177–189.

Mazur, Allan, Julie Mazur and Caroline Keating. 1984. "Military Rank Attainment of a West Point Class: Effects of Cadets' Physical Features." *American Journal of Sociology* 90:125–150.

Mazur, Allan and Ulrich Mueller. 1996. "Facial Dominance." *Research in Biopolitics* pp. 99–111.
URL: *http://cogprints.org/631/*

Murray, Gregg R. 2014. "Evolutionary preferences for physical formidability in leaders." *Association for Politics and the Life Sciences* 33:33–53.

Ogbondah, Chris W. 2000. "Political Repression in Nigeria, 1993-1998: A Critical Examination of One Aspect of the Perils of Military Dictatorship." *Africa Spectrum* 35(2):231–242.
URL: *http://www.jstor.org/stable/40174844*

Rainey, Carlisle. 2016. "Dealing with Separation in Logistic Regression Models." *Political Analysis* 24(3):339.
URL: *+ http://dx.doi.org/10.1093/pan/mpw014*

Roberts, Tyson and Lisa Mueller. N.d. "Coup de Hot: Does Appearance Affect Coup Leader Succes in Office.".

Roodman, David. 2014. "Bet Aid Transfers Data Set (1960-2012).".
URL: *http://www.cgdev.org/publication/net-aid-transfers-data-set-1960%E2%80%932012*

Ross, Michael. 2008. "Oil, Islam, and Women." *American Political Science Review* 102(1):107–123.

Therneau, Terry, Cynthia Crowson and Elizabeth Atkinson. 2016. "Multi-state models and competing risks." *CRAN* .

Todorov, Alexander, Anesu N. Mandisodza, Amir Goren and Crystal C. Hall. 2005. "Inferences of Competence from Faces Predict Election Outcomes." *Science* 308(5728):1623–1626.

Weiner, Tim. 1998. "US Aides Say Nigeria Leader Might Have Been Poisoned." New York Times.