Replication of: Leader Age, Death, and Political Liberalization in Dictatorships

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1 Abstract[1]

Hummel (2020) found that leader deaths rarely result in political liberalization; while personalist and older dictators' deaths are more likely to lead to liberalization, such opportunities are nonetheless modest. With replication data and code provided by Professor Hummel through the Harvard Dataverse, I was able to replicate the findings of the original paper. Given the robustness of the models created in the Appendix of the original paper, I extended the results by adapting the published figures to a multi-color palette which is colorblind-friendly. Additionally, *** MORE EXTENSION???***

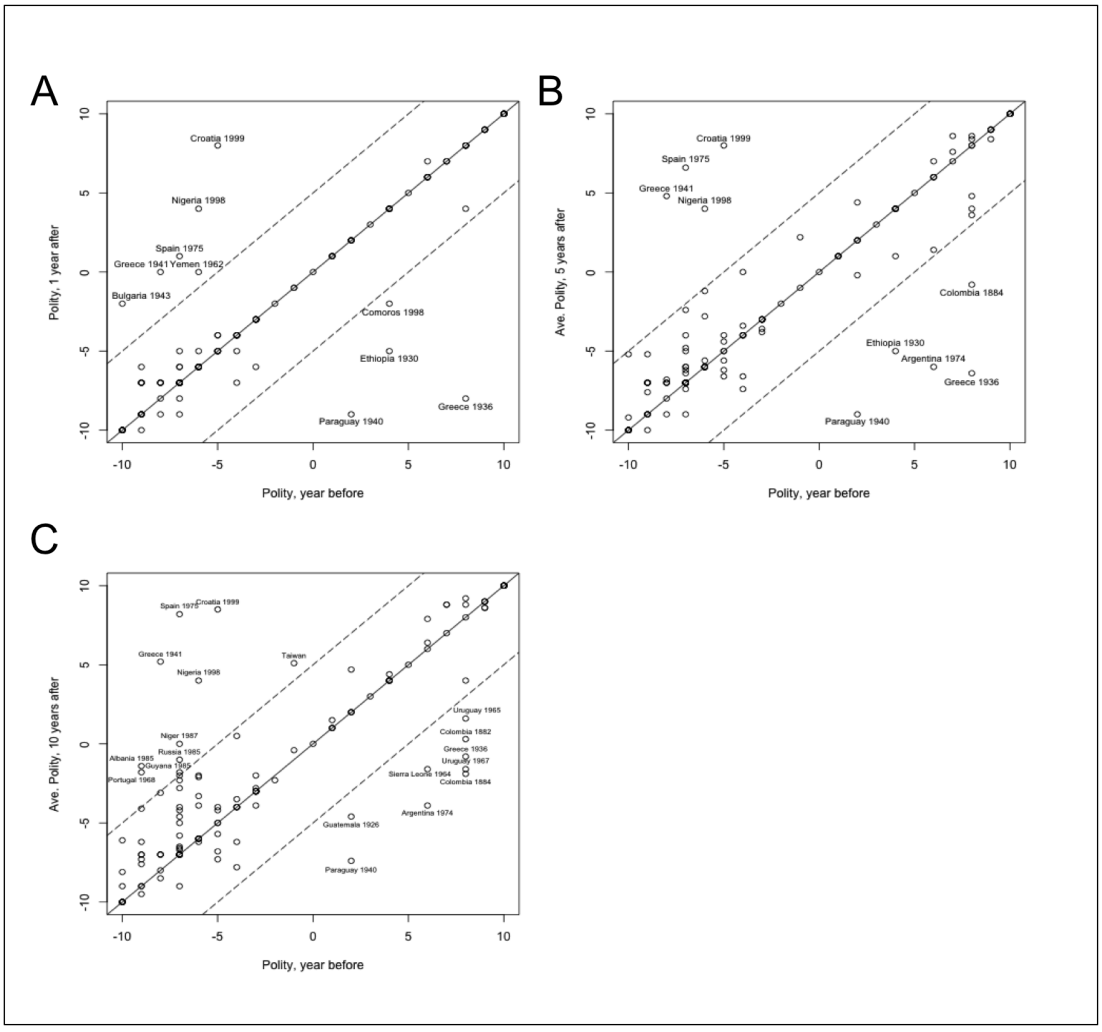
2 Introduction

3 Literature Review

4 Replication Analysis

I began with a replication of Figure 1 from Hummel (2020). The figure has three subplots. Each depicts the relationship between the Polity of a country before and after the death of a leader. In each case, the Independent Variable is Polity, the year before the death of a leader. In Plot A, the Dependent Variable is Polity, 1 year after the death; in Plot B, it is Polity, 5 years after the death; and in Plot C, it is Polity, 10 years after the death.

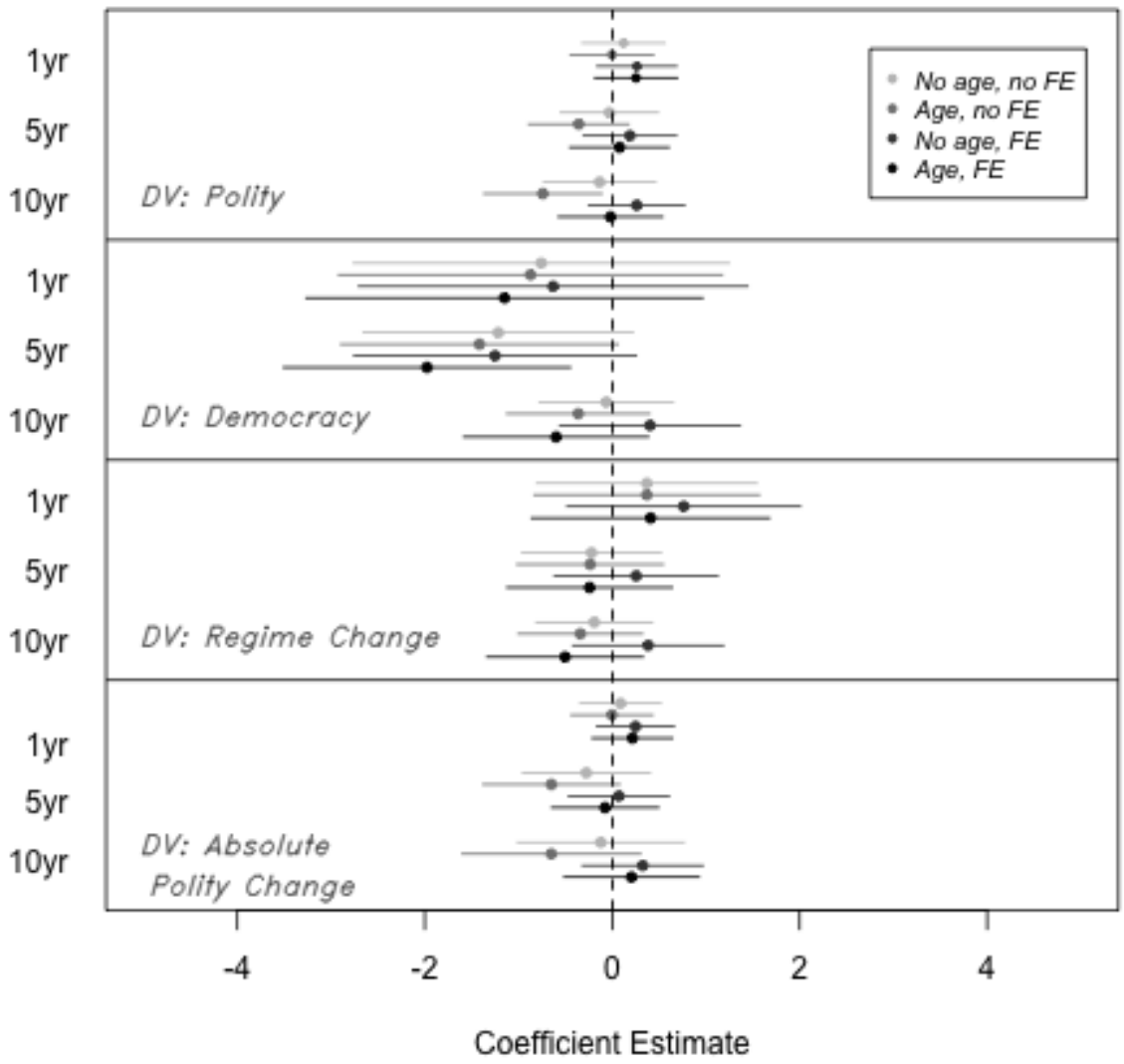
[1] All materials necessary for this replication can be accessed at my GitHub Repository.



In these plots, one thing becomes abundantly clear, regardless of a leader's death, most regimes' Polity scores do not change drastically, even when we look at five years and ten years after the leader's death. Specifically, note that most regimes fall in the band around the middle of each plot: these are those regimes which did not experience significant differences (more than 5) in Polity scores. If leader death led to political liberalization, we would expect that most regimes would lie in the upper-left corner; these are regimes that experienced significant increases in Polity scores after a leader's death. However, this is not what we see. Instead, we actually see about an even number of regimes in the top left corner and in the bottom right corner; this means that we see just as many regimes which see significant decreases in Polity scores as regimes

which see significant increases in Polity score.

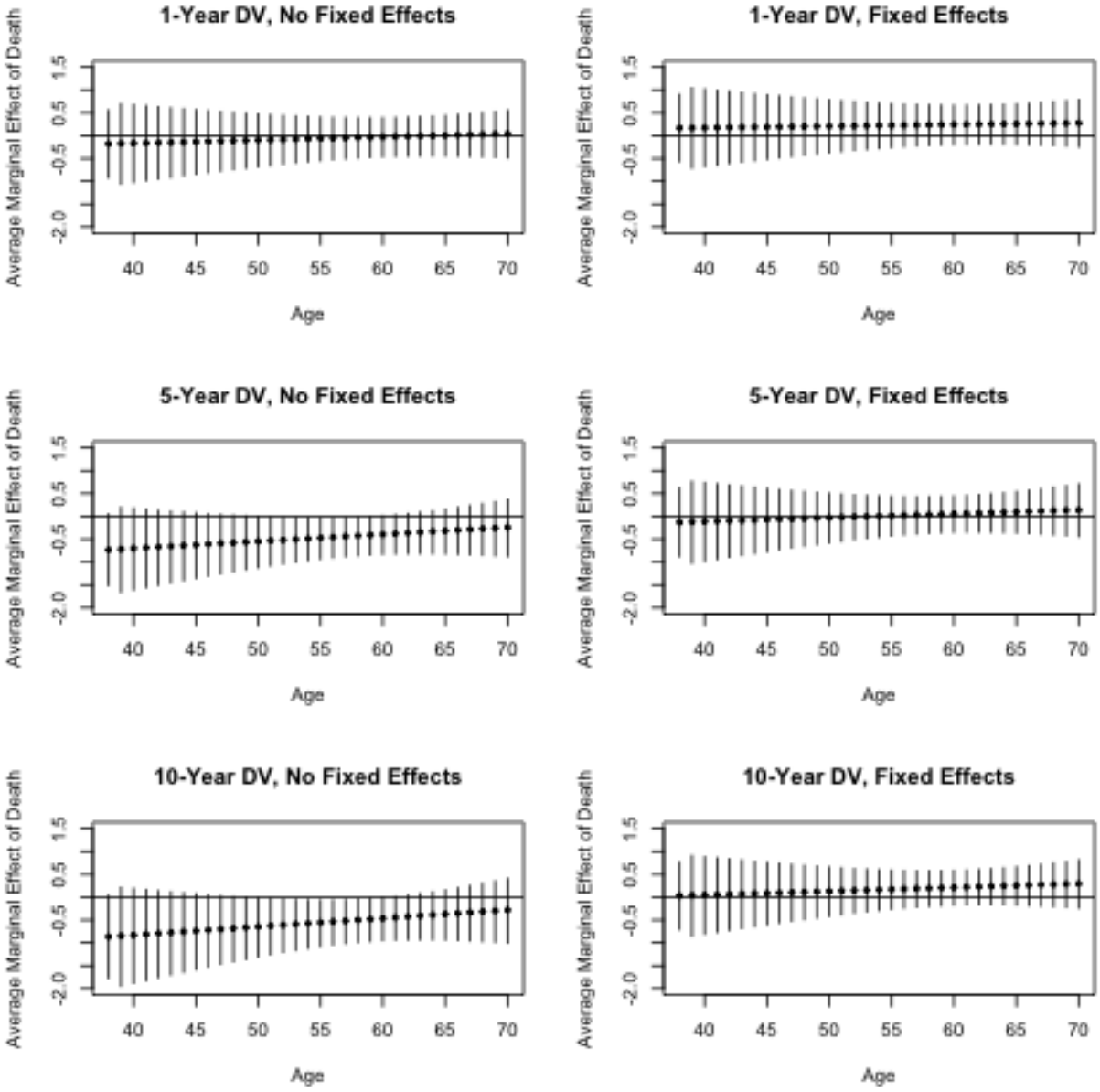
I continued with a replication of Figure 2 from Hummel (2020). The figure depicts the coefficient estimates from a total of 48 different models which assess the effect of leader age on political change. The models are primarily in four different categories, based on their dependent variables. The first set of models uses Polity; the second set of models uses Democracy; the third set of models uses Regime Change; and the last set of models uses Absolute Polity Change. Within each set of models, there are three sub-categories. Each of these uses three different time frames: 1-Year Dependent Variable, which compares the dependent variable in year t to year *t-2*; 5-Year Dependent Variable, which compares the dependent variable in years t through *t+4* to year *t-2*; and a 10-Year Dependent Variable, which compares the dependent variable in years t through *t+9* to year *t-2*. Furthermore, within each of these subgroups, there are 4 versions of the model: one without a control for leader age and without fixed effects; one with a control for leader age and without fixed effects; one without a control for leader age and with fixed effects; and one with a control for age and with fixed effects. All models using Polity and Absolute Polity Change were linear models, whereas all models using Democracy and Regime Change were logit models. For the fixed effects linear models, fixed effects included country and year. For the fixed effects logit models, conditional logit models with country fixed effects were used.



These plots show that, for the most part, the effect of leader's death on political liberalization is insignificant. There is a negative and significant impact on the 5-Year Democracy variable, and in one case with the 10-Year Polity variable. Hummel notes that there is no case in which there is a significantly positive effect on the likelihood of political change. She says, "These results highlight just how unlikely significant political change, particularly in a liberalizing direction, is to follow the death of a dictator" (2002, p. 983).

Next, I replicated Figure 3. In each subplot, the independent variable is age and the dependent variable is the average marginal effect of leader death on Polity. The first row uses the 1-Year Dependent Variable, the second row uses the 5-Year Dependent Variable, and the third row uses the 10-Year Dependent Variable.

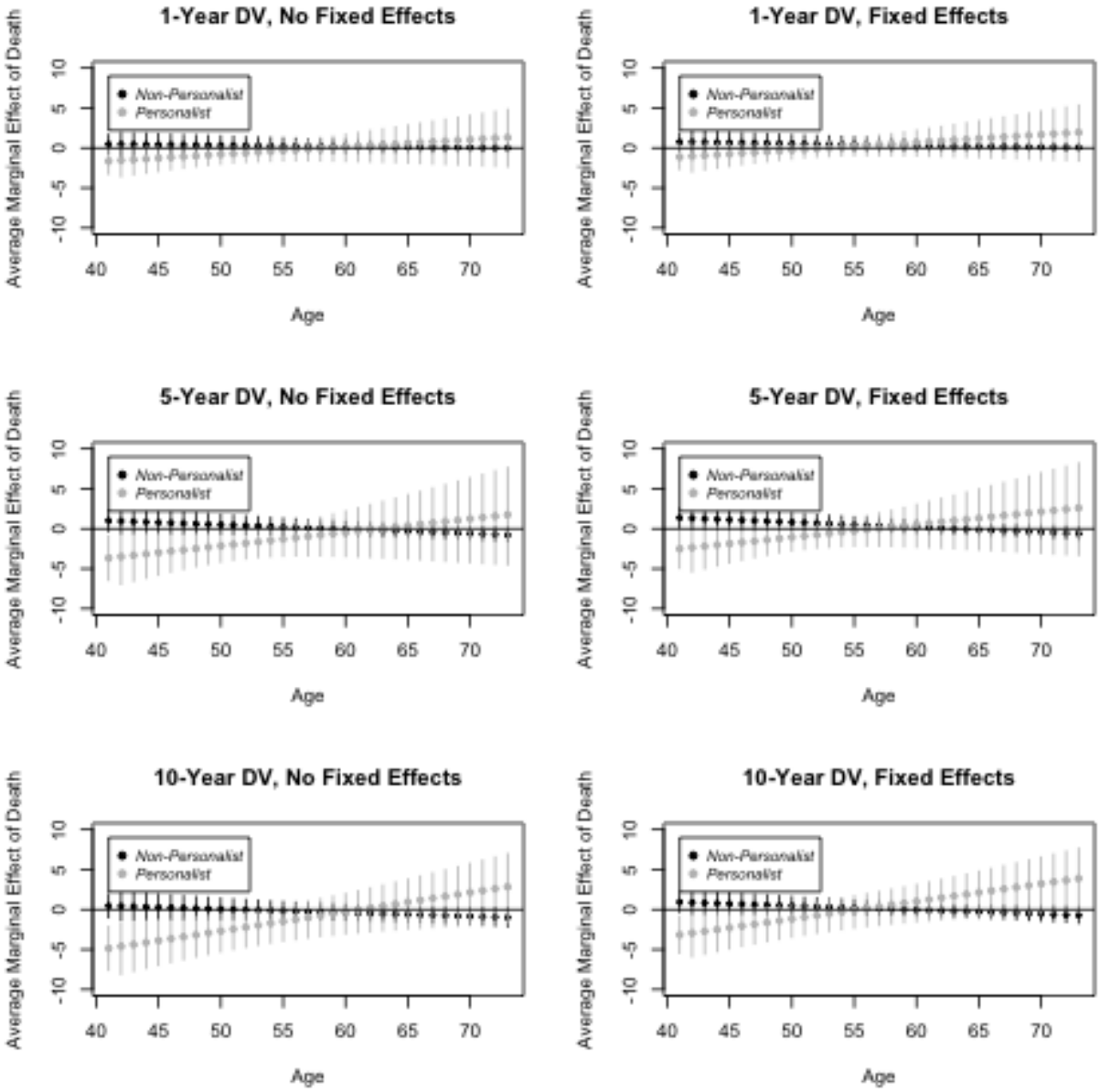
The models used for the first column include no fixed effects, whereas the models in the second column include fixed effect specifications for country and year. All models are OLS linear regressions, and they all include a control for Polity at year *t-2*. Marginal effects of leader deaths are calculated using the Margins package in R; the average marginal effect is average of the difference between the predicted value in a year with a death of the leader and the predicted value in a year without a death of the leader.



While all of these model specifications indeed show that the average marginal effect of death on Polity increases as does age, the effect is not large, nor statistically significant (note the overlap of the bars with the line at 0). This provides a good indication that there is support to Hummel's first hypothesis that

political liberalization is more likely to follow death as a dictator ages. However, because the results are not statistically significant, and appear to have a relatively small effect, we cannot say that age alone is a major contributor to political liberalization after the death of a leader.

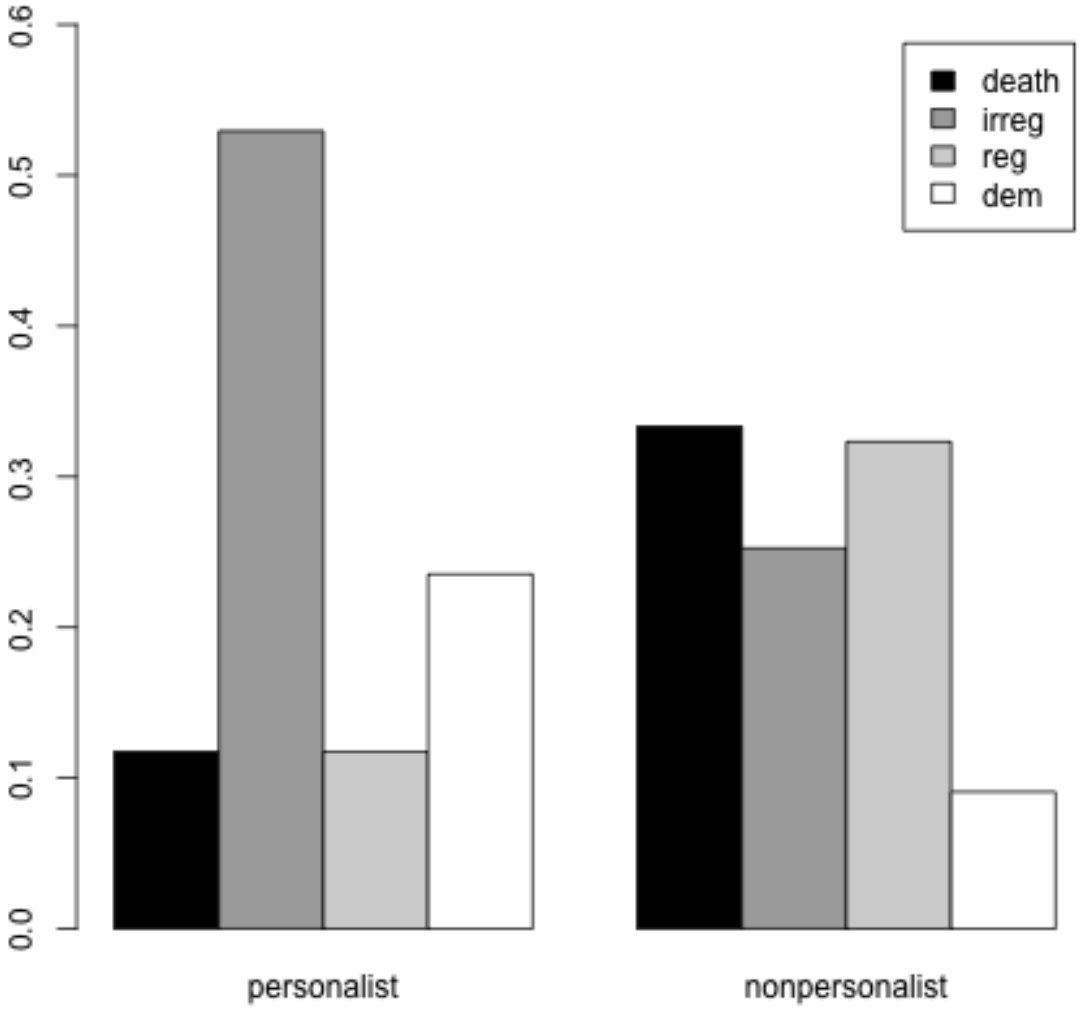
As a result, Figure 4 differentiates between regime type: personalist or non-personalist. The models are nearly identical to those from Figure 3, except for the addition of a triple interaction between death, age, and regime type. Furthermore, these models also include a control for leader age at year *t-1*.



These figures support Hummel's second hypothesis that post-death liberalization is more likely as leaders age in personalist regimes. We can see that in all specifications, as personalist leaders age, the average

marginal effect of death increases, whereas the opposite is true in non-personalist regimes. Importantly, the effect is statistically significant in models that use the 5-Year and 10-Year Dependent Variables, which implies that political liberalization likely takes time to occur following the death of a personalist leader; reform is not likely in the year immediately following death.

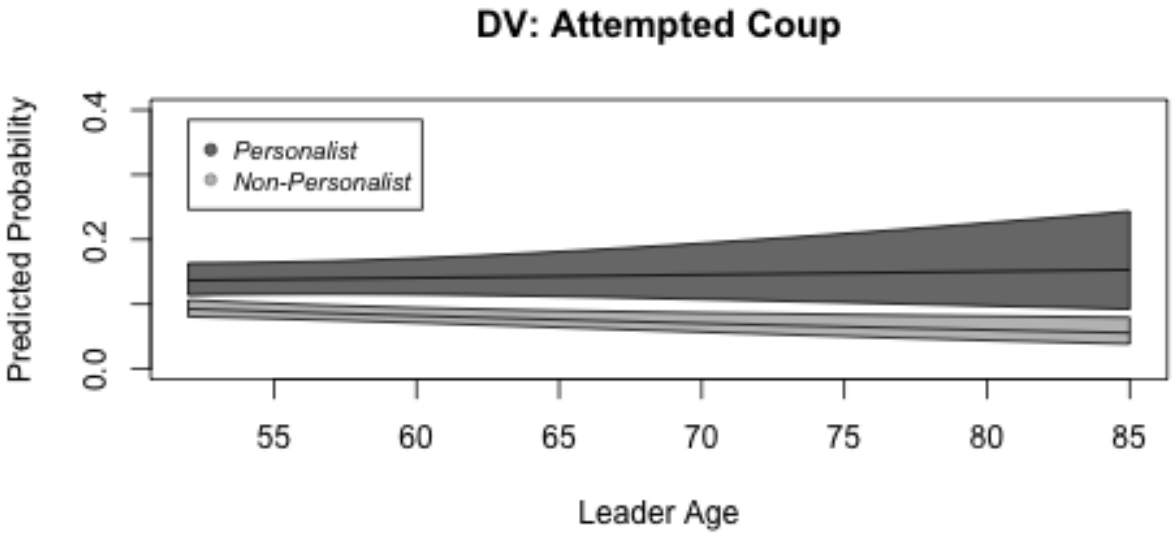
However, Hummel also showed that these events are extremely rare: death only accounts for about 10% of leader exits among personalist dictators. This can be seen in the replication of Figure 5.

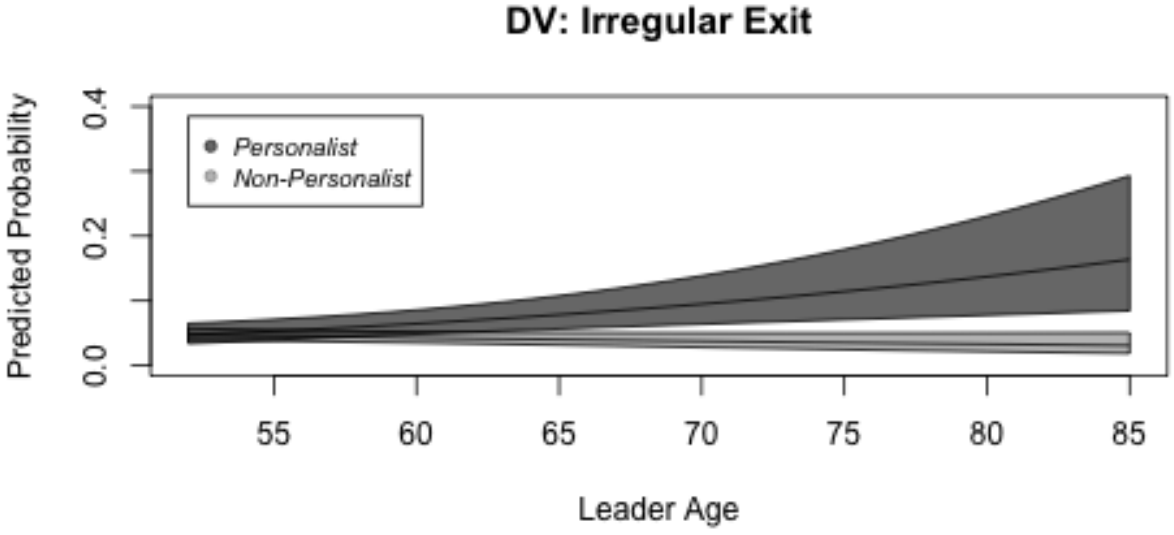


Unfortunately, even though it appears the best chance at political liberalization comes when aging personalist dictators die, we can see that personalist dictators die at much lower rates than non-personalist

dictators. However, the increased number of irregular exits warrants further analysis.

In order to investigate the incidence of irregular exits, Hummel then used logit models to predict the probabilities that a leader would face a coup-attempt or an irregular exit as a function of age and regime type. The models include controls for both the Polity at year *t-1* and a lagged count of attempted and successful coups in the last ten years. Here is my replication of Figure 6:

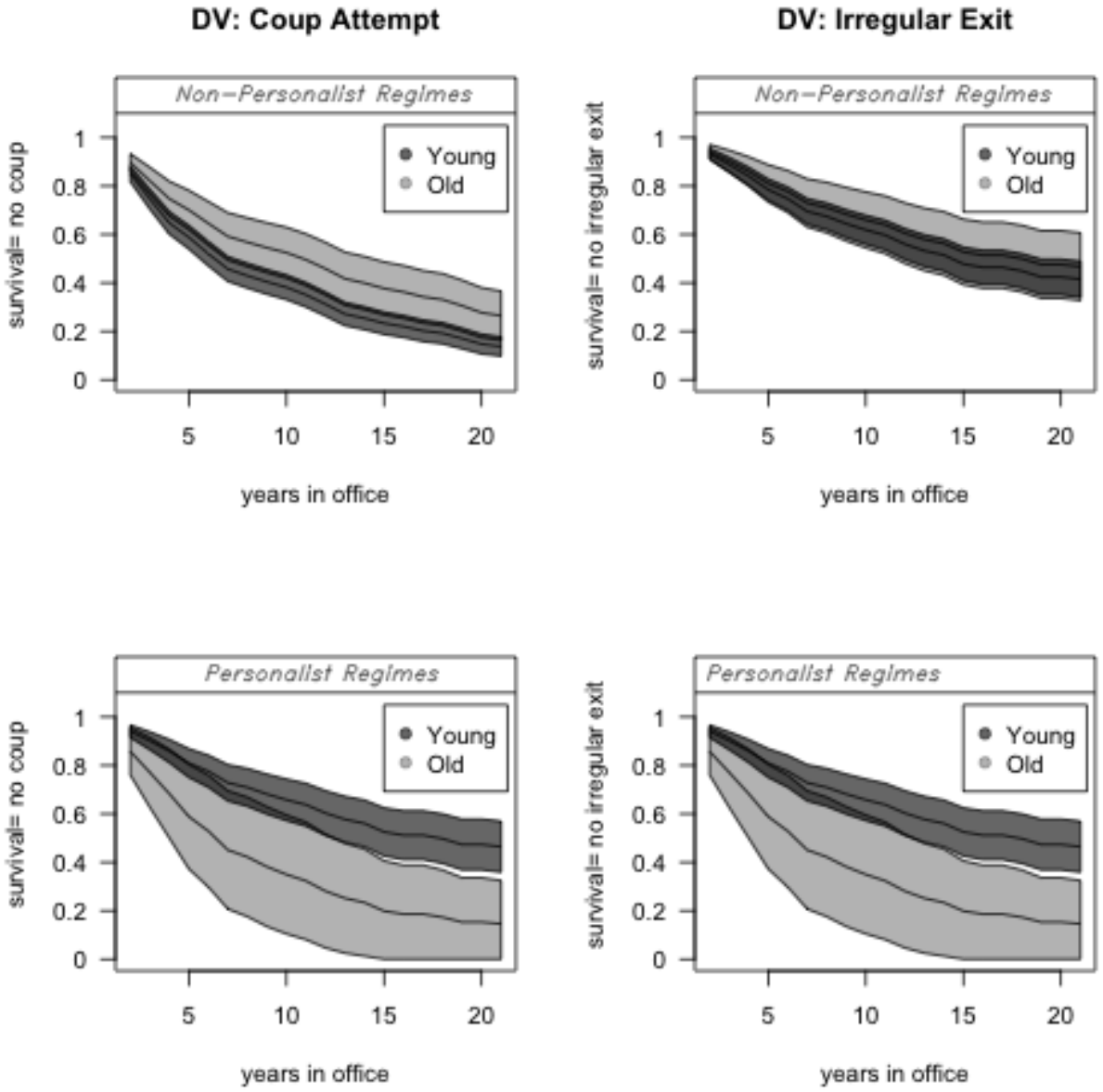




First, my replication was not identical to the initial plot in terms of layout. Mine is slightly more stretched along the x-axis. Substantially, the graphs are the same. We can see that as dictators age, the gap between the personalist and non-personalist dictators' probabilities increase for both attempted coups

and irregular exits more broadly. This hints that personalist dictators are perhaps more susceptible to coup attemps than are non-personalist dictators.

Hummel then plots the survival (as in no coup or irregular exit) probabilities for both personalist and non-personalist regimes, comparing young and old dictators in each. Young and old thresholds are calculated using the 10th and 90th percentiles of dictator ages at death; these end up as 49 and 82, respectively. Using Cox proportional hazard models, she controls for Polity in year *t-1* and the number of coup attempts in the last ten years. In full transparency, I am not adept at Cox proportional hazard models, but I was able to replicate the results thanks to the code provided through the Harvard Dataverse.



*** INTERPRET *** FIG 8 *** FIG 9

5 Discussion

6 Bibliography