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UNITÉ MIXTE DE RECHERCHE CNRS

Elderhood and compliance: how Aging Dictators affect civil wars

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Abstract:

In democracies, civil wars are less likely to occur. According to the minimal approach to democracy, the reason is that opposition parties can reasonably expect to win the next elections. They therefore prefer to wait than to rebel. In dictatorships, waiting until the dictator dies is generally much more costly. This waiting period, however, is considerably shortened when the dictator is old. Therefore, the risk of domestic conflict should decrease along with the age of leaders. Based on 149 countries from 1946 to 2001, our empirical analysis shows that the leader's age decreases the likelihood of civil war in dictatorships, but not in democratic regimes. More precisely, this is true in weakly institutionalized dictatorships, but not in authoritarian regime types which provide institutional ways of controlling and replacing the incumbent.

1. Introduction

In primitive and agrarian societies, elderhood has often been associated with high status (Flanagan 1989, Posner 1995). In many tribes, the chief was chosen among the oldest men (Simmons 1945, Read 1959, Spencer 1965) and this is classically explained by two main groups of factors, based either on social ties which are acquired with age or on personal characteristics, such as wisdom or knowledge (Werner 1981). However, these explanations fail to explain why, in modern democracies, gerontocracy declines. Moreover, recent studies show that aging dictators produce less economic growth, because their time horizon decreases (Jong-A-Pina and Mierau 2011). This should not provide incentives for groups to choose old chiefs.

In this article, we put forward that gerontocracy is a way to foster civil peace. In re-elective political systems, citizens submitted to an unwanted ruler tend not to revolt because they are aware that an institutional mechanism exists to get rid of the leader. This is the main claim of the minimal approach to democracy (Przeworski, 1999): revolts are likely to occur when there is no other ways to change the leadership within a reasonable lapse of time. When political systems do not provide such an institutional mechanism, the change in leader can be expected to occur only through the leader's death or through a revolution. In such a situation, being ruled by an old leader allows dissatisfied people to expect a change reasonably soon and, for these reasons, deters them from revolting.

The case of the Vatican is instructive. Though the pope is elected, there are no mechanisms but his death to dismiss him. As a consequence, since 1503, the average age of popes on the day of their election has been 64. In particular, the two last popes were over 75 at their election, which reflects the increase in life expectancy. No re-elective democracy is so gerontocratic. For example, since 1789, the US presidents have been elected, on average, at 55. Electing old popes produces a limitation in incumbency (the average length of pontificate is 10 years), which approaches that of a re-elective democracy.

This hypothesis means that old leaders are preferred by people not for their social or personal

characteristics, but precisely because they are likely to step down from power after a few years. The basic assumption is that risk-averse people minimize the possible loss and make the choice which excludes the worst scenario happening – this is known as the minimax strategy. Since future leaders may be appreciated or hated, the minimax strategy consists in shortening the length of their reign. Several empirical consequences can be derived from this hypothesis. For example, introducing re-elective systems should decrease the mean age of the leaders¹. Or, again, every peaceful mechanism implemented to allow a change in leadership should produce social peace. Also, in democracies, non removable offices are likely to be held by old people.

The main testable consequence of this hypothesis, however, is that, in political regimes which are deprived of an institutional way of dismissing the leader, the risk of civil war decreases with the age of the dictator. This comes directly from the suggested relationship between expected time of reign and opponents' likelihood of revolt. This is the empirical expectation tested in this article.

In the next section, we develop this hypothesis more specifically. Section 3 is dedicated to presenting our data, our methodology and other causes of revolt we control for. Section 4 displays our results, before concluding.

2. Leader's age, civil conflict onset and regime type

While leaders are increasingly considered as one of the main units of analysis in international relations, current research almost exclusively focuses on the impact of leaders' features on their own behavior (Jones and Olken 2005, DeRue et al. 2011), including studies centered on the age of dictators (Walter and Scheibe 2013). In this respect, this article differs from the literature on age and leadership since, following our hypothesis, leaders' age has an impact on the behavior of people who are ruled by those leaders, rather than on the leaders' own behavior. This difference probably explains why, while the

¹ This does not mean that dictators are necessarily older than elected officials: Since the typical dictator does not rule by consent, there are few ways of preventing a young dictator from seizing power.

relationship between age of dictators and international wars has been largely studied, nothing is yet known about age and civil wars. Indeed, unlike international wars which are initiated by leaders, civil wars are often triggered by an organized part of civil society². The personal characteristics of leaders indubitably influence their activity – in international conflicts, for example – but they also influence the activity of their environment, like civil wars.

What happens in international crises, however, provides interesting clues for understanding civil wars. Recent literature finds that aging leaders are more likely to be involved in militarized disputes than young leaders (Horowitz et al. 2005, Potter 2007, Bak and Palmer 2010). These findings have two consequences for this study. First, they disprove the hypothesis that old leaders are perceived as weaker. Spisak (2012) confirms, with experimental evidence, that older-looking leaders are significantly preferred during war. Therefore, aging dictators should experience fewer civil wars because of their authority. Second, according to Chiozza and Goemans (2011), leaders who anticipate a forcible removal from office, e.g. through civil war (Chiozza and Goemans 2004), have an incentive to initiate international conflict. Therefore, if aging leaders tend to trigger international wars, we should argue, contrary to our prediction, that they feel more threatened by domestic unrest than younger leaders. Interestingly, however, there are some exceptions to the rule. Horowitz et al. (2005) find that in personalist regimes, the general effect reverses: as age increases, the risk of conflict declines in comparison to other types of regimes.

According to our general hypothesis, the older the leader, the lower the risk that a civil conflict breaks out. However, this relationship depends on political regime type: We expect political institutions, and especially those that rule access to, and exit from, office, to mediate the effect of age on civil conflict. The most straightforward implication is that regimes which have regular, competitive elections, like

2 Although it might be difficult to identify the initiator of a conflict with accuracy, most studies on political institutions and civil war at least implicitly rely on the assumption that civil conflicts are initiated by dissatisfied opposition groups (see e.g. Hegre et al. 2001; Fearon and Laitin 2003; Regan and Bell 2010; Fjelde 2010), and not the incumbent.

democracies, cancel out the impact of age on civil wars because they provide other mechanisms to get rid of the leader.

H1: In democracies the age of the leader does not impact the risk of civil war.

Yet, there are other potential exceptions to our general expectation, even for non-democratic regimes. More specifically, we expect the leader's age to be strongly related to occurrence of civil war when the regime is poorly institutionalized, displays a strong tendency toward personalization of power, is not based on a clear time horizon, and does not rely on transparent rules about the access to and succession in power. Yet, recent research has shown that this is not necessarily the case for every non-democratic regime, and points toward the high institutional diversity of contemporary dictatorships. Numerous classifications of dictatorships are now available, the most prominent of which (e.g. Geddes 1999a; Hadenius and Teorell 2007; Cheibub et al. 2010) are based on the nature of the ruling institution, the mode of succession and alternation, the way the leader accesses and exits office, and the allocation of power within the ruling elite. Among the most commonly identified subtypes are military dictatorships (Geddes 1999a; Hadenius and Teorell 2007; Cheibub et al. 2010), party regimes (Geddes 1999a; Hadenius and Teorell 2007; Magaloni 2008; Magaloni and Kricheli 2010), and monarchies (Hadenius and Teorell 2007; Cheibub et al. 2010; Geddes et al. 2012). Because of the specificities of those three regime types, we do not expect them to display the same relationship between the leader's age and the risk of civil conflict outbreak.

The typical military dictatorship displays three features that are likely to affect the relationship between the leader's age and the risk of conflict. First, military dictatorships are often of temporary nature (Geddes 1999a; Hadenius and Teorell 2007), which shortens the waiting time until the next change of leadership. Second, most of them rely on rules for sharing and rotating political power and thus provide institutional mechanisms to get rid of the leader (Geddes 1999b, 10). Alternation in power within the

military junta can also happen in a more informal way: As Geddes puts it, “coups in military regimes are usually leadership changes, the analogue of votes of no confidence in parliamentary systems” (Geddes 1999b, 23). Third, and most importantly, military leaders typically rule as a junta (Cheibub et al. 2010, 85), which means that the ruling entity is the military itself, not a single man (see also Geddes 1999a, 121). According to Geddes, military dictatorships often seek to prevent the personalization of the rule by choosing an officer known for legalism and low charisma to lead the junta (Geddes 1999b, 10). Furthermore, military leaders seem to face lower incentive to consolidate their personal power than party cadres or members of the ruling clique in civilian dictatorships. Only a small minority of them originally joined the military to attain political power. Most of them are primarily motivated by the military's corporate interests, absolutely want to avoid threatening the cohesion of the military, suffer a lower cost if they lose their office than elites in civilian dictatorships, and are strongly dependent on the other officers to maintain themselves in power and consolidate their rule. Hadenius and Teorell (2007, 151) confirm that military dictatorships tend to exhibit a lesser degree of concentration of power than most other types of autocracy. In short, in military regimes, the individual characteristics of the leader are likely to be less relevant in explaining the occurrence of civil war.

H2: In military dictatorships, the age of the leader does not impact the risk of civil war.

Likewise, we do not expect the leader's age to affect civil war in party dictatorships either. First, past studies on single-party regimes mostly agree on the fact that the party – not the dictator – is the actual ruling entity, or at least exerts some influence on policies and access to political offices (Geddes 1999a, 1999b; Hadenius and Teorell 2007; Magaloni 2008). Second, party regimes – contrary to other civilian regimes – usually display succession and alternation mechanisms (Geddes 1999a). Thus, they share two common features with military dictatorships: they are more institutionalized than the average dictatorship and the leader is controlled by a strong organization. Therefore, we also expect party

regimes to alter the relationship between age and conflict.

H3: In single-party regimes, the age of the leader does not impact the risk of civil war.

Monarchies are also a special case, since one of their defining features is hereditary succession. For the opposition, even if the monarch is old, there is little incentive to wait until his death in the hope of attaining political power because he will be replaced by a member of the ruling family: There is no mechanism of alternation through death in those cases. Thus, from the opposition's perspective, the incentive to rebel is stable over time and is not affected by the monarch's age. Monarchy affects the impact of the leader's age on the conflict likelihood exactly as democracy does, but for completely different reasons: Whereas democracy affects this relationship by shortening time horizons, monarchy does by lengthening them to infinity.

H4: In monarchies, the age of the leader does not impact the risk of civil war.

Finally, the remaining autocracies, which are not based on either a single party or the military or an aristocratic class, do not clearly provide any institutional procedure in terms of access to and succession in power. Although these regimes are heterogeneous, their most important common feature is the fact that leaders are not backed up by a preexisting organization on which they can rely and to which they can delegate some of the decision-making power to stabilize their rule. In this regard, this category of regimes resembles that of "civilian autocracies" from the classification provided by Cheibub et al. (2010). However, to avoid conceptual confusion and since Cheibub et al. include party regimes in the category of civilian autocracies while we treat them separately, we prefer to refer to those regimes as "weakly institutionalized autocracies". In those regimes, we should expect a negative relationship between the leader's age and the risk of civil war.

H5: In weakly institutionalized autocracies, the age of the leader decreases the risk of civil war

To sum up, elections are not the only way to get rid of unwanted leaders. Both military dictatorships and single-party regimes provide institutional procedures to change or control the leader, in case of political crisis. By providing such procedures, these regimes allow people to hope for a non violent alternation before the death of the leader. Monarchies are different because they provide a hereditary succession so the monarch's death cannot be considered as meaningful alternation. Finally, only weakly institutionalized autocracies display the conditions which link leaders' age and civil war. Governments change only with the death of the leader³, and this change can be regarded as an alternation. In other words, in those regimes, the expected benefits from civil wars are higher, except when the leader is old.

3. The data

3.1 Dependent variable

Our dataset covers 149 countries for the period from 1946 to 2001. Our dependent variable is a dummy that takes on the value of 1 in years in which an internal conflict breaks out or if there have been at least two years since the last observation of the conflict. Since we only focus on conflict onset, subsequent conflict years are coded 0. To measure civil war, we use the UCDP / PRIO Armed Conflict Dataset (Gleditsch et al. 2002; Harbom and Wallensteen 2010), that defines armed conflict as a "contested incompatibility that concerns government or territory or both, where the use of armed force between two parties results in at least 25 battle-related deaths" and in which one of the two parties is the government of a state (Gleditsch et al. 2002, 618-619). We include conflicts over government and conflicts over both government and territory; however, we exclude separatist conflicts, since they do

3 Strictly speaking, another peaceful way is voluntary retirement. But this is very rare (Goemans et al. 2009).

not concern the central government and hence are not necessarily related to alternation in power.

Overall, in the period considered, 171 civil conflicts broke out, being 2.5% of the sample.

3.2. *Regimes*

According to our hypothesis, the impact of leaders' age should vary with political regimes. To identify relevant regimes, we use a dataset of political regimes by Alvarez et al. (1996), recently updated by Cheibub et al. (2010). The reasons for this choice are twofold. First, it is the only dataset which provides both a clear operational definition of democracy (which is consistent with the authors' coding rules) and a distinction of several autocratic subtypes⁴. Second, their classification relies upon Przeworski's argument about democracies being "regimes in which parties lose elections" and explicitly refers to the pacifying effect of alternation (elections being, in their framework, the democratic counterpart of the leader's aging). This makes their approach on political regimes especially relevant to our argument, since their definition of democracy explicitly relies upon alternation through contested elections, and we expect age to be a substitute for elections when voting is not enough to get rid of the leader. More specifically, in their classification, a regime must meet four requirements to be classified as a democracy: The chief executive must be directly or indirectly chosen by popular election; the legislature must be popularly elected; there must be at least two parties competing in elections; and, in the cases where the three first rules apply, an alternation in power must have taken place under the same electoral rules as the ones that brought the chief executive to power (Cheibub et al. 2010, 69). In other words, all elective regimes in which the incumbent always wins are

4 While numerous classifications of political regimes are now available, most of them are not appropriate for our argument. For example, the recent dataset from Boix, Miller, and Rosato (2012) also provides a transparent coding of regimes based on a minimal, binary definition of democracy, but no distinction between autocratic subtypes. Hadenius and Teorell (2007) use the mean of each country's Freedom House and Polity scores and a somewhat arbitrary cutoff to distinguish authoritarian regimes from democracies. The datasets by Geddes (1999) and Geddes, Wright and Frantz (2012) exclusively code autocratic regimes and provide no operational definition of democracy at all.

automatically classified as non-democracies, even though they display seemingly democratic institutions. Thus, the residual category of dictatorships includes all regimes in which alternation in power either occurs through other mechanisms than elections or does not occur at all.

As previously stated, one of the main advantages of the regime classification by Cheibub et al. (2010) is that it combines a theoretically grounded empirical distinction between democracies and dictatorships and a differentiation between autocratic subtypes⁵. With regard to the latter, they distinguish between civilian autocracies, monarchies, and military dictatorships. Monarchies rely on family and kin networks, and military dictatorships on the armed forces and juntas. The residual category of civilian dictatorship encompasses all regimes in which the leader is neither monarchic nor military (Cheibub et al. 2010, 89). The authors regard the latter category as a highly heterogeneous set of regimes. Even if this definition fits our definition of the poorly institutionalized autocracy, it still includes single-party regimes, which we expect to behave differently from the typical civilian dictatorship. Fortunately, disaggregated data are available: We use the variable “de facto” that measures the existence of at least one legal opposition party, to distinguish single-party regimes from other civilian autocracies⁶.

Descriptive statistics on the distribution of political regimes and on the frequency of intrastate conflict are shown in Table 1. Note that monarchies are rare in our sample, and that only six intrastate conflicts out of 171 broke out in monarchies. Data are abundant for democracies, military regimes and weakly institutionalized autocracies.

5 Note that, while the coding procedure for democracies and dictatorships is identical in both versions of the dataset, the classification of authoritarian subtypes has changed. We use the autocratic subtypes identified by Cheibub et al. (2010).

6 The variable “de facto” takes the value of 0 when there is no party, 1 when only one party exists, and 2 when there are two parties or more. Thus, we code dictatorships as single-party regimes when “de facto” equals 1, and as civilian otherwise. Note that the variable “de jure” also measures party systems. Yet, “de jure” refers to the legal existence of parties (i.e., if parties are constitutionally allowed) and does not measure whether opposition parties actually exist.

TABLE 1 ABOUT HERE

3.3 Age of leaders and leader duration

The leaders' age is the main explanatory variable. Data are provided by the Archigos database (Goemans et al. 2009), which captures the age of the person that exercises power de facto in each country. In years where two (or more) leaders were reported, we select only the age of the leader in office on January First. This allows us to avoid reverse causation issues: the leaders' age is measured prior to the conflict. However, we also add a dummy that indicates the years in which a change of leadership occurred.

Figure 1 displays the distribution of the leader's age by regime type.

FIGURE 1 ABOUT HERE

The main problem with the leader's age is that it is correlated to the number of years the leader has been in office. Thus, the leader's age effect on civil war could be due to the negative correlation between the leader's spell in office and the probability of a conflict outbreak: We could reasonably expect that the longer leaders stay in office, the lower the risk of civil conflict onset, either because they have had time to reinforce their control on the country or because their long tenure precisely indicates they have been popular enough to avoid being violently overthrown. In order to distinguish both effects, we also use a variable called leader duration which measures the number of years the leader has been in office.

Age and leader duration are obviously correlated, but their Spearman's rho is relatively low (0.3).

Descriptive data are displayed in Table 2.

TABLE 2 ABOUT HERE

Descriptive data reveal that weakly institutionalized autocracies are the most gerontocratic, slightly more than democracies. However, they are not those in which the average leader's spell in office is the highest. Monarchs and party leaders govern roughly ten years on average, while dictators in weakly institutionalized autocracies stay in office roughly six years on average. This difference can be partly explained by the fact that monarchs tend to access office earlier, and that the average regime duration is relatively low for weakly institutionalized autocracies: They display the shortest timespan of all the regimes.

3.3 Control variables

In addition to the dependent and independent variables, we use a number of control variables that have been found to be associated with civil war, and whose omission might bias our results. We first control for the level of economic development, measured as gross domestic product (GDP) per capita (Bolt and van Zanden, 2013): Previous studies have identified poverty as one of the most robust predictors of civil war, either because it lowers the opportunity costs of enlisting as a rebel (Collier and Hoeffler 2004) or because it affects state capabilities and counter-insurgency capacities (Fearon and Laitin 2003). We also add a measure of ethno-linguistic fractionalization (ELF), based on data from Cederman et al. (2010). Country size (Buhaug, 2006) and population (Fearon and Laitin 2003) have also been found to increase the risk of civil war: We thus include the natural log of country size, drawn from the World Bank data, and of population, based on data from Ross (2013)⁷.

We also include a dummy variable which takes on the value of 1 in years a change of leadership occurs, and a Cold War dummy. Since regime change can induce conflicts (Regan and Bell 2010), we control

⁷ Following previous studies on civil war, we use the natural log of GDP per capita (see Collier and Hoeffler 2004), population (see Collier and Hoeffler 2004; Fearon and Laitin 2003) and country size (see Buhaug 2006). GDP and population are lagged one year to avoid potential reverse causation issues.

for regime duration, based on Cheibub et al.'s (2010) data. Table 3 displays the basic descriptive statistics.

TABLE 3 ABOUT HERE

4. Empirical analysis

We estimate the probability of civil conflict onset through a logit regression. To address potential time-dependence problems, we add a variable measuring the time in years since the most recent occurrence of civil conflict (Collier and Hoeffler, 2004), based on the UCDP / PRIO's measure of civil war.

We use two different strategies. First, we distinguish five subsamples, namely democracy, military dictatorship, single-party regime, monarchy, and weakly institutionalized autocracies. Second, we conduct analyses based on interaction terms: over the whole sample, we estimate the impact of each political regime interacted with the leader's age. This allows us to better assess the conditional impact of age. Each of the models reports the odds ratios of the independent variables. Finally, we use robust standard errors clustered by leader.

4.1 Subsamples

We first run our model for each regime type. Table 4 displays the results.

TABLE 4 ABOUT HERE

Results indicate that age has a negative and significant impact on the dependent variable in the case of weakly institutionalized autocracies (Model 5): In those regimes, the risk of civil war decreases by 5% as the age of the leader increases by one year. Furthermore, consistently with our expectations, the

impact of age is almost inexistent in the cases of democracies, party regimes and military dictatorships. This lends preliminary support for Hypotheses 1, 2, 3, and 5. We also perform three robustness checks to control the sensitivity of our results. First, we run the two latter models with country and year fixed effects. The structure of our data makes the use of fixed effects models somewhat tricky, because all countries and years in which the dependent variable does not vary – i.e., countries experiencing only peace or years in which no conflict was reported – are left out of the model. Although the fixed effects are too conservative and many observations are lost in the regression, the impact of age in weakly institutionalized autocracies holds in all estimates. Second, we try to correct for the problems of the high proportion of zeroes in our dependent variable: According to King and Zeng (2001), logistic regressions tend to produce biased coefficients and probabilities estimates in rare-events data. We thus use their correction procedure and rerun our models using rare-events logit. Again, neither the coefficients nor the significance of our variables of interest vary substantially. Finally, we also test the linearity of the age coefficient in weakly institutionalized autocracies. We find that the effect is monotonic, but not necessarily linear, since the model using the square of age performs as well as that displayed in table 4, and we cannot distinguish between them⁸.

Contrary to our theoretical expectations, age of the monarchs does impact the likelihood of civil conflict, and the effect is positive (Model 4). Thus, Hypothesis 4 is rejected. These results, however, have to be interpreted cautiously: The number of observations has dropped to 302, which limits the validity of the inference, and two control variables (Cold War and leader change) are omitted from the estimation due to perfect prediction of the 0 outcome⁹. However, one possible explanation for this unexpected finding could be that some monarchies are vulnerable to succession conflicts. According to

8 We do not reproduce those results in the paper for space reasons. All these estimations are available upon request from the authors.

9 A closer look on the data reveals that only six conflict outbreaks are reported in monarchies (which is mainly due to the relatively small number of monarchies in the sample). None of those occurred after the end of the Cold War, and five out of six occurred in a period of leadership change (which lends some support to the succession crises interpretation).

Cheibub et al.'s (2010, 85) definition, if hereditary succession is the constitutive feature of monarchies, primogeniture is not: This means that, in some cases, there is no designated successor. Although the successor still has to be chosen within the ruling family, and the decision is the prerogative of a small council of family leaders, this leaves some room for negotiation and for potential conflict. If succession conflicts occur, they are more likely to break out at the end of the monarch's time in power (that is, as his death approaches). Hence, if a relationship between the leader's age and the risk of conflict exists, the correlation should be positive rather than negative.

Overall, the control variables display the expected signs, but they fail to attain statistical significance in most models. Cold war has no discernible impact on the dependent variable. Country size is significant only in monarchies. Population has a positive impact in each model, but is only significant in democracies and monarchies. The effect of ELF is positive and significant in democracies and military regimes. GDP affects the risk of conflict in military dictatorships and in weakly institutionalized autocracies, whereas regime duration is only significant in the case of monarchies. Surprisingly, the duration of peace positively affects the risk of conflict in monarchies; but, again, results for monarchies have to be interpreted carefully. Perhaps the most interesting finding is that change of leadership has a positive and strongly significant impact on the risk of civil war in military dictatorships, one-party regimes and weakly institutionalized autocracies, but not in democracies. This lends support to the idea that, although the degree of concentration of power varies across authoritarian regime types, democracy is the only regime in which change of leadership does not destabilize the whole regime.

4.2 Estimates with interaction terms

Table 5 displays coefficients for age, regimes and the interaction of both. In the first estimate, military regimes are the reference and the impact of other regimes is compared to them. In the second estimate, the impact of the leader's age in weakly institutionalized autocracies, which are our most relevant regime, is compared with its impact in the other regimes taken as a whole.

TABLE 5 ABOUT HERE

In both models, we find that weakly institutionalized autocracies are more likely to experience civil conflicts than the other regimes, but this risk significantly decreases as the dictator gets older. With regard to the magnitude, the odds ratios show that the risk of civil wars is roughly seven times higher in weakly institutionalized autocracies than in other regimes. However, for each year added to the leader's age, there is a drop of roughly 3% in the odds of civil war. This means that an 80 year old leader is about four times less likely to experience a civil war than a 30 year old leader. This does not compensate for the impact of the regime, but considerably decreases the risk of civil war for old leaders. Note that the results hold even though we control for how long the leader spends in office. These results, taken together, are consistent with Przeworski's (1999) thesis: in regimes in which there is no procedure to choose (and change) the leader, the risks of civil war are higher. For this reason, intrastate armed conflicts are expected to be more common in weakly institutionalized autocracies. However, other factors can also explain this result, in particular the fact that it is easier to overthrow a regime which is not based on a solid institutional setup (Acemoglu et al. 2010). Although this last factor is probably relevant, the specific impact of leader's age in those regimes argues in favor of Przeworski's mechanism. In those regimes, an old leader is regarded as a proxy for a future alternation in power, and this decreases the risk of civil war.

Note also that in the other regimes (including monarchy), the leader's age does not affect the risk of civil war. Thus, there is some support for Hypothesis 4; Hypotheses 1, 2, 3, and 5 are strongly supported.

With regard to the other variables, the classic variables such as GDP per capita, ELF and the population size have the expected coefficient and are significant at least the 10% level. Leader change also increases the risk of civil war.

The same abovementioned robustness checks are performed. Findings hold when standard errors are clustered by countries or by year; they hold under country and year fixed effects; and they are confirmed using rare-events logit. The dummy for weakly institutionalized autocracies remains positive and significant, while the interaction term with the leader's age remains significant and negative¹⁰.

Conclusion

This article argues in favor of Przeworski's (1999) argument according to which the expected time of reign of a leader impacts the risk of civil war: When submitted to an unwanted ruler, people have the choice to revolt or to wait until the next change of leadership. If no alternation in power can be expected in the near future, rebellion then becomes the preferred option. Peaceful alternation can occur either through institutionalized mechanisms (like elections) or through the leader's death: This is why, in regimes that lack such institutionalized alternation mechanisms, the leader's aging reduces the probability of a rebellion.

We find here that in democracies, the age of the leader does not impact the risk of civil conflict, while in those regimes we called weakly institutionalized autocracies, the leader's age correlates negatively with the outbreak of civil war. This finding contributes to understanding why primitive and agrarian societies were typically ruled by old men, while this is much less the case of contemporary regimes. However, we also show that simply contrasting democracies – that display regular mechanisms to get rid of the leader – with autocracies – that lack such mechanisms – may be an oversimplification. After taking into account the institutional diversity of contemporary authoritarian regimes, we show that the impact of the leader's age on civil conflict is dependent on the institutional context: In military dictatorships, party regimes, and monarchies, the age of the leader does not have any discernible effect

10 All these estimations are available upon request from the authors.

on civil wars, while it is highly relevant to explain the occurrence of civil conflict in weakly institutionalized autocracies. Two conclusions can be drawn from these findings: First, some autocratic regimes also display alternation mechanisms that have partially similar effects to those provided by democracies. Second, strong institutions that are clearly conceived to control the leader reduce the impact of his personal characteristics on the behavior of citizens.

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Figure 1: Distribution of leaders' age per regime type

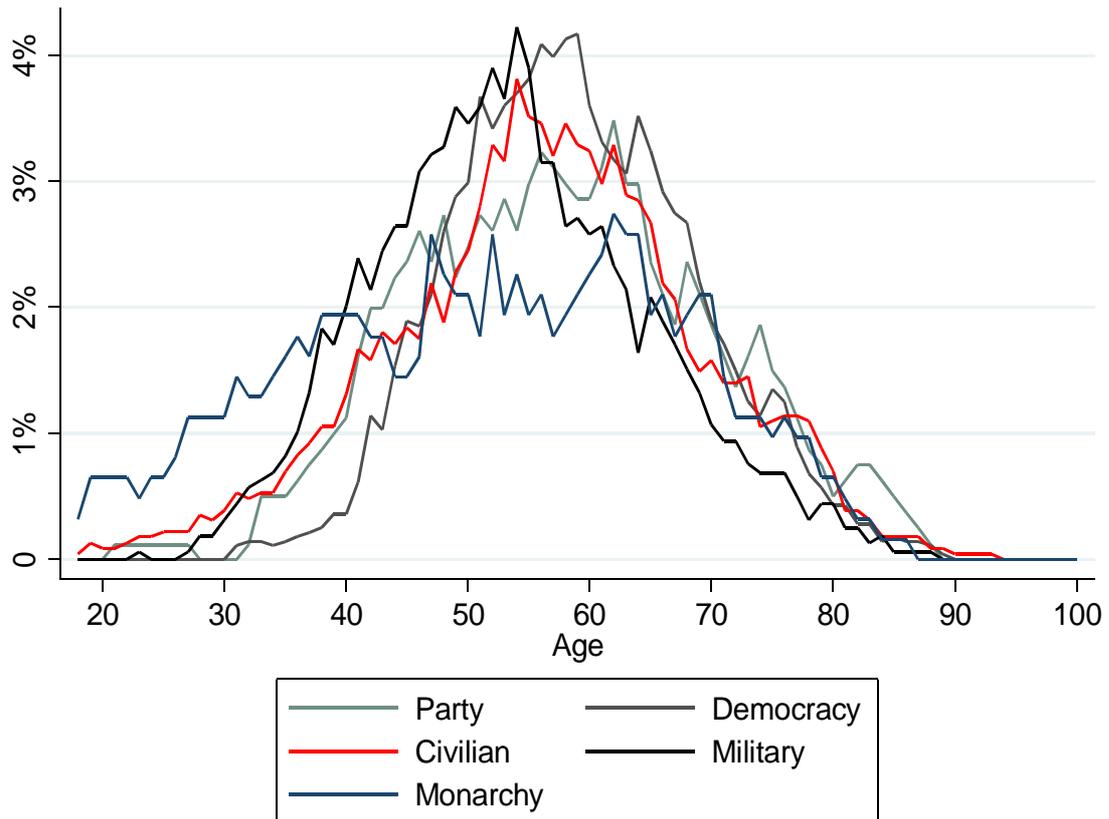


Table 1: Distribution of political regimes and intrastate conflict outbreaks

	N	Conflict outbreaks (frequency)	Conflict outbreaks (% years)
Military	1534	62	4.04
Monarchy	587	6	1.03
Weakly inst. autocracy	1468	46	3.13
Single-party	802	18	2.24
Democracy	2585	39	1.51

Table 2: Regime duration, leader's age and leader's spell in office by regime type (1946-2001)

	N	Average regime duration	Average leader's age	Average leader's spell in office
Democracy	2585	31.0	58.8	3.0
Military dictatorship	1534	12.5	53.3	7.6
Single-party regime	802	12.9	57.7	9.7
Monarchy	587	32.5	51.6	10.4
Weakly institutionalized autocracy	1468	12.4	59.1	6.4
TOTAL	6976	22.2	56.9	6.1

Table 3: Descriptive statistics by regime

	Democracy	Military	Monarchy	Party	WI autocracy	Sample
Cold War (N. obs.)	1641	1232	467	725	1005	5114
Post Cold War (N. obs.)	944	302	120	77	463	1906
ELF: Mean (Std. dev.)	0.304 (0.266)	0.412 (0.306)	0.533 (0.335)	0.500 (0.319)	0.485 (0.319)	0.404 (0.309)
(ln) GDP / capita: Mean (Std. dev.)	8.567 (0.949)	7.364 (0.730)	8.103 (1.128)	7.269 (0.790)	7.534 (0.824)	7.895 (1.039)
(ln) Country size: Mean (Std. dev.)	12.208 (1.847)	12.604 (1.516)	11.797 (2.063)	12.625 (1.688)	12.316 (1.873)	12.328 (1.797)
(ln) Population: Mean (Std. dev.)	16.174 (1.484)	15.947 (1.319)	14.753 (1.569)	15.686 (1.413)	15.915 (1.652)	15.907 (1.530)
Peace duration: Mean (Std. dev.)	18.827 (17.175)	13.099 (11.827)	14.929 (12.567)	14.249 (11.830)	11.195 (12.233)	15.058 (14.476)
Leader duration: Mean (Std. dev.)	3.013 (3.986)	7.555 (8.250)	10.407 (9.529)	9.668 (8.383)	6.420 (6.703)	6.108 (7.267)
Leader change (% of obs.)	24.14	14.28	6.30	6.11	11.31	15.68
Regime duration: Mean (Std. dev.)	31.003 (31.852)	12.486 (10.076)	32.596 (28.061)	17.372 (13.773)	15.406 (13.017)	22.216 (24.346)

Table 4: Determinants of civil conflict per regime (odds ratios)

	(1) Democracy	(2) Military	(3) One party	(4) Monarchy	(5) WI autocracies
Age	0.998	1.016	1.001	1.269**	0.947**
Leader duration	1.014	0.940**	0.997	0.772**	1.046
Regime duration	0.999	1.024	0.959	0.946**	0.985
Leader change	1.514	4.211***	4.742**		5.259***
Peace duration	0.996	1.017	0.987	1.199**	0.977
GDP / capita	0.728	0.529***	1.117	0.927	1.667**
Country size	1.154	0.984	0.914	0.143**	0.900
Population	1.205*	1.016	1.220	266.56**	1.255
ELF	6.770***	3.327***	1.457	0.003	2.567
Cold War	0.690	0.702	0.383		1.225
Constant					
N	2599	1473	725	302	1214
Pseudo R2	0.11***	0.10***	0.08*	0.31**	0.10***

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 5: Determinants of civil conflict (odds ratios)

	Ref.: military dictatorship	Ref.: all institutionalized regimes
Age	1.010	1.000
WI autocracy	8.115**	7.067**
WI autocracy * age	0.959**	0.970**
Monarchy	0.587	
Monarchy * age	0.992	
One party	1.423	
One party * age	0.987	
Democracy	0.439	
Democracy * age	0.996	
Leader duration	0.978	0.994
Regime duration	0.997	0.993
Leader change	3.233***	3.064***
Peace duration	0.998	0.998
GDP / capita	0.779*	0.701***
Country size	0.956	1.005
Population	1.196**	1.147*
ELF	2.898***	2.742***
Cold War	0.776	0.848
Constant		
N	6443	6443
Pseudo R2	0.08***	0.07***

*** p < 0.01, ** p < 0.05, * p < 0.1