

Benevolent Autocrats¹

William Easterly

NYU, NBER, BREAD

March 2011

Abstract: “Benevolent autocrat” is a perpetually popular concept in development policy discussions. This paper suggests this popularity is not solely explained by academic theory and evidence. The history of the concept shows the role of political motivations for embracing the concept. The literature on cognitive biases shows multiple biases that would lead to beliefs in benevolent autocrats even if they did not exist, especially as these interact with stylized facts about autocracy and growth. Neither political motivations nor cognitive biases imply disproof of the concept, but they do suggest the need for even more rigorous scrutiny. The theory implied by a benevolent autocrat story is naïve relative to modern theories of autocracy, and it presumes an implausible level of knowledge by autocrats. The evidence underlying “benevolent autocrat” interpretations has equally plausible – or more plausible -- alternative explanations. The well-known “leaders matter” results of Jones and Olken (2005, 2009) do not demonstrate that intentions and actions of individual autocrats affect growth. Since democratic rights are an end in themselves, the burden of proof is on autocrats to show that they provide material payoffs that offer a trade-off with such rights. This paper argues they fail to meet that burden of proof.

¹ I am grateful to Steven Pennings for research assistance.

Benevolent autocrats are a perpetually popular concept in economic development discussions. Some of the largest successes in development, such as China, Singapore, South Korea, Taiwan, and Hong Kong, are associated with autocrats. These cases show that autocracy is not automatically and always incompatible with rapid growth. Some interpretations of these successes are that countries at low levels of education and income are not ready for democracy, that autocrats are necessary to take difficult decisions that pay off in the long run but democracies would not choose in the short run, or that development benefits from expert technical knowledge that the ruler must be free to implement without democratic checks and balances.

All of this could be correct. But the benevolent autocrat hypothesis needs skeptical scrutiny just as much as any other hypothesis in development, and yet some of the discussion verges on uncritical acceptance instead. Since democratic rights are an end in themselves, the beneficial autocracy view carries a burden of proof to show that it is a useful means to other desirable ends.

Of course, an ideological sympathy for democracy could also lead to manipulation of evidence. Claims for the pragmatic benefits of democracy also need skeptical scrutiny.² This paper does not attempt to resolve the gigantic issue of democracy vs. autocracy in general.

Instead, the focus is on the specific concept of benevolent autocrats. The paper will principally address the public policy debate on this concept, not the academic literature (although it will consider how the debate relates to and interprets the academic literature). The paper does not impugn the integrity of academic research on “benevolent autocrats” or on autocracy in general.

First, the paper describes the history of the benevolent autocrat concept and shows how the concept’s popularity may reflect not only empirical veracity but also attitudes toward developing societies and political interests. This history does not automatically discredit the concept, which should be scrutinized solely using the usual methods. At the same time, however, priors should not be influenced unduly by the popularity of the concept if this popularity partly exists for non-academic reasons.

Second, the paper suggests that a number of cognitive biases identified in the behavioral economics literature would support beliefs in benevolent autocrats even if they did not really exist. The paper discusses a number of stylized facts alleged to support benevolent autocrats and shows how cognitive biases have misinterpreted these facts. Again, cognitive biases do not constitute any sort of disproof of benevolent autocrats, but they do suggest the need for critical scrutiny of these beliefs is even greater than before.

Third, this paper discusses more formal theory and evidence on benevolent autocrats. The benevolent autocrat idea is not very compatible with modern theories of autocracy. Some of the formal evidence on growth under autocracy would be consistent with benevolent autocrats, which is what is usually emphasized, but the evidence is also compatible with other theories in which individual intentions of autocrats play little or no role.

² This would include claims that democracy or democratic transitions could lead to violence or economic disruption, as in Collier (2009); I don’t attempt to survey the extensive literature but note Rodrik and Wacziarg (2005) as an introduction (they themselves find no evidence for economic disruption).

I. The benevolent autocrat: historical and modern views

The benevolent autocrat idea has been around for a long time. Its long popularity seems to be a mixture of its perceived empirical veracity, attitudes toward developing societies, and political convenience for those in power. It is hard to see how it could be otherwise – autocrats and those whose interests are aligned with autocrats are not bound by academic rules for accepting and promoting ideas, and it would be hard to imagine they would be neutral on a theory that helps justify their hold on power. Similarly, the acceptance of the benevolent autocrat idea is also going to be influenced by the perceived need for paternalistic intervention, which reflects attitudes towards the would-be subjects of the autocrat. The point is NOT that the idea of benevolent autocrats should be disqualified by association with colonialism, racism, or political motivations. Rather, the point is that the concept's popularity does not reflect ONLY rigorous scientific testing –so such testing is even more important.

A convenient historical starting place is John Stuart Mill in his classic *On Liberty* (1869), which argued strongly for democratic rights for the individual. However, he made an exemption for what we would today call developing countries:

We may leave out of consideration those backward states of society in which the race itself may be considered as in its nonage. Despotism is legitimate ... in dealing with barbarians, provided the end be their improvement... Liberty has no application to any {such} state of things.”

The concept of the benevolent autocrat appeared from the beginning in development economics. The modern field of development economics arose in the 1940s before the end of the colonial era. A British colonial official named Lord Hailey in 1941 conceived of development as a justification for the autocratic colonial power: “A new conception of our relationship...may emerge as part of the movement for the betterment of the backward peoples of the world.” Hailey made a distinction between economic rights for colonial subjects (good) and political rights (not so good). The idea of an autocrat granting “economic freedom” but not “political freedom” has had enduring appeal up to the present.

Jan Smuts, the Prime Minister of South Africa in a speech to the UN Founding Conference in 1945 described colonial subjects as “dependent peoples, still unable to look after themselves.” Although we now know colonialism ended only a few years later, this was not the expectation at the time.

Despite the end of colonialism – and a welcome backlash against the racism implicit in the previous statements -- a new justification for autocracy arose in the need for a coordinated plan to end poverty. Only the latter would satisfy the political demand for rapid progress. For example, later Nobel Laureate Gunnar Myrdal said in 1956:

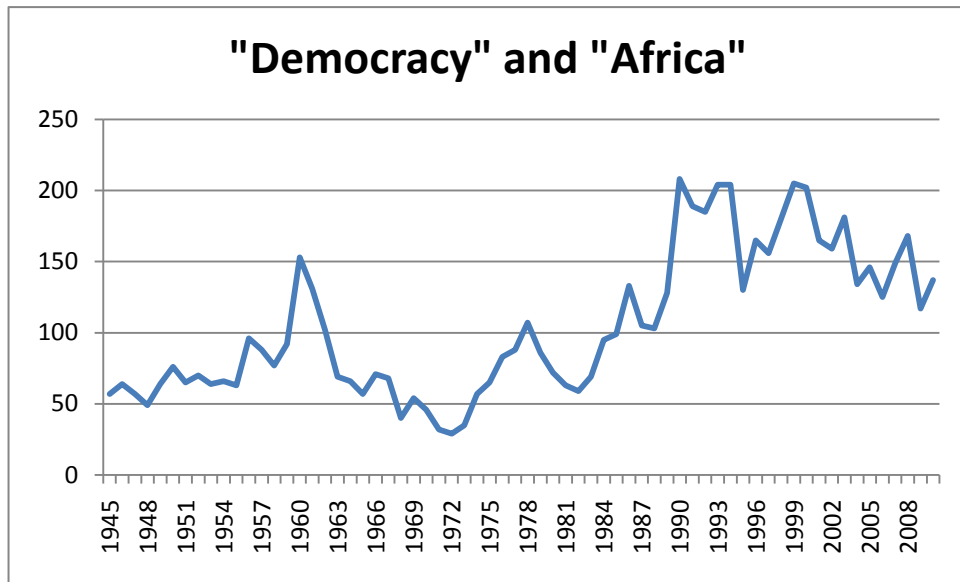
Central planning ...HAS to be staged by underdeveloped countries with weak administrative apparatus and a largely illiterate and apathetic citizenry...the alternative to making the heroic attempt is continued acquiescence in economic stagnation which is politically impossible ...this is why [planning] is unanimously endorsed by experts in the advanced countries.

Most of the history of aid and development has displayed a relative indifference to whether aid-receiving countries are autocratic or democratic (which had been formalized in the Articles of Agreement of the

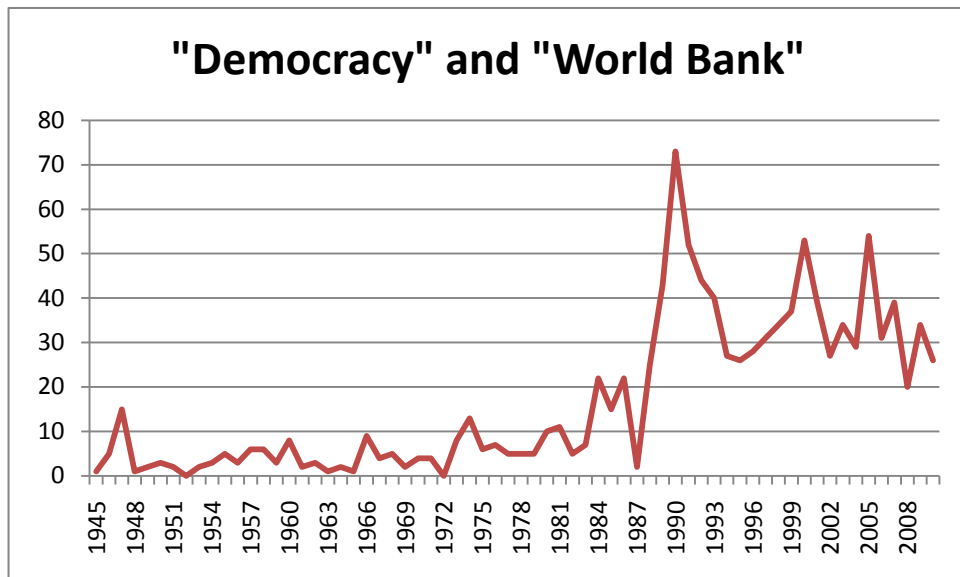
IMF and the World Bank in 1944, which banned political considerations in aid allocation decisions). The neutrality about political systems – and the benevolent autocrat concept -- may have been politically convenient for the US government who tolerated autocracy in Cold War allies for strategic reasons. Only after the end of the Cold War in 1989 was the taboo on democracy in aid agency discussions lifted. Figures 1a and 1b shows the sharp upward shift in 1990 as measured by New York Times stories per year that contained a discussion of both the keyword “democracy” and a development-related keyword – either “Africa” or “World Bank.” Although democracy was no longer a taboo topic in development policy discussions after 1990, the debate on benevolent autocrats was far from resolved.

Figure 1: Number of New York Times stories per year mentioning keywords shown.

Panel a:



Panel b:



Today, benevolent autocrats still appear in many discussions of development both in the popular press and in more formal policy discussions. The New York Times columnist Thomas Friedman said in 2010:

One-party autocracy certainly has its drawbacks. But when it is led by a reasonably enlightened group of people, as China is today, it can also have great advantages. That one party can just impose the politically difficult but critically important policies needed to move a society forward in the 21st century.

Notable development intellectuals Nancy Birdsall and Frank Fukuyama (2011, p. 51) noted the effect of the current crisis on ideas favoring autocracy:

Leaders in both the developing and the developed world have marveled at China's remarkable ability to bounce back after the crisis, a result of a tightly managed, top-down policymaking machine that could avoid the delays of a messy democratic process. In response, political leaders in the developing world now associate efficiency and capability with autocratic political systems.

Even more extreme, many have suggested that a "Beijing Consensus" is replacing the old "Washington Consensus" of the World Bank and IMF, suggesting "how China's authoritarian model will dominate the twenty-first century" (Halper 2010).

The official aid agencies today have a more ambiguous position. They don't want to explicitly endorse autocracy, so they use more vague words that seem to imply autocracy or at the least are indifferent to it. One example this paper will discuss is a report the World Bank issued in 2008 by a Growth Commission it had assembled. The Commission also included outside economists such as Nobel Laureates Robert Solow and Michael Spence (the latter was the chair of the Commission, a World Bank executive was Vice Chair). One of the strongest conclusions in the report, after studying rapid growth success stories, was that "Growth at such a quick pace, over such a long period, requires strong political leadership."³

It is not of much academic interest to confirm or refute conclusions of this report, which was not an academic study, for their own sake. Rather, the Growth Commission report is a good illustration of the popularity of the benevolent autocrat story in public policy discussions. Almost all of the successes it studied were autocracies, so "strong leadership" does seem like a bit of a euphemism for "benevolent autocrat."

The Commission included 22 members, mostly individuals in policy-making positions in developing countries (including a few who served under autocrats), and had a secretariat made up of World Bank staff. It also consulted a large number of leading academic economists, and commissioned 67 working papers by the latter. Attribution of the above conclusions to any of these individual participants is inappropriate, but the report does seem to qualify as some kind of consensus emerging from a combination of policymakers and academics writing for general audiences. The paper discusses below

³ This conclusion may have reflected strong priors as well as evidence assembled in the case studies done by the Commission. The "Framework for Case Studies" prepared before the Case Studies were done, made the statement that "economic growth requires: Leadership."

how the report provides illustrative examples of cognitive biases that distort the evidence for benevolent autocrats.

In other documents, the World Bank no longer endorses the extreme degree of central planning advocated by Myrdal in the 1950s. Its recommended approach to development for poor countries is partly captured by a process called Poverty Reduction Strategy Papers (PRSP), which each country is supposed to prepare. The kind of strategy recommended seems to envision a relatively unconstrained executive:

...define medium- and long-term goals ...establish indicators of progress, set annual and medium-term targets. ... take into account what is known of the linkages between different policies, their appropriate sequencing, and the expected contribution of policy actions to the attainment of long-term goals and intermediate indicators. ...in light of the diagnosis, the targets, their estimated costs, available resources. (Sourcebook on World Bank PRSP web site today)

Aid agency documents on the nature of government, such as the World Bank's 2007 Governance Strategy Paper, do not advocate autocracy. But nor does the word "democracy" ever appear in the report, no do any of the words historically associated with it like "human rights", "liberty", "freedom," or "equality." Instead the report uses ambiguous jargon:

Engaging systematically with a broad range of government, business, and civil society stakeholders is key to GAC (Governance and Corruption) reform and development outcomes.

At the same time, USAID and some bilateral agencies now give aid to programs in some countries under the rubric of "democratization." Yet even these agencies seem to have a split personality, as aid agencies continue to give a lot of aid to regimes classified by most indices as autocracies. Table 1 shows the largest flows to autocracies over 2004-2008 by donor and by recipient:⁴

Donors		Recipients	
United States	\$46	China	\$15
Japan	\$23	Vietnam	\$12
Germany	\$16	Sudan	\$10
World Bank (IDA)	\$14	Egypt	\$9
France	\$14	Cameroon	\$9
United Kingdom	\$10	Rwanda	\$5
EC	\$9	Tunisia	\$3

In the academic literature, it is less obvious whether a systematic case is made for benevolent autocrats very often. This paper will discuss a few examples that provide relevant evidence and then discuss their interpretation in Section IV.

⁴ Sudan is a strange case here as donors like the US government obviously do not approve of the Bashir regime. The aid is flowing as part of the peace agreement with Southern Sudan.

II. Data on autocracy and democracy

This paper will use the standard Polity IV measure from -10 to 10, the most common measure in economics for autocracy. For most of the analysis below, we need a dichotomous measure that classifies all countries as either autocracies or democracies.

Corvalan 2011 summarizes and extends the analysis of some major problems with democracy indices. Two problems that are relevant for our purposes:

(1) although Polity IV appears to be a continuous measure, it has a strong bimodal distribution and so is de facto close to a dichotomous distribution. This is also true of other continuous democracy measures such as Freedom House. This means that the dichotomous approach of the analysis below does not overly distort the data.

(2) the upper limit of 10 is censored, as it encapsulates a large variety of countries and time periods. This also makes a “perfect score” of 10 not as high a standard for democracy as one might think, which devalues even more values like 7, 8, and 9. Almost a fifth of the sample is coded as 10. The US has had a 10 since 1871, despite huge changes since then in democratic rights for groups such as blacks and women. Earlier in US history, despite one eighth of the population enslaved and variations in suffrage, it had a value of 9 from 1809-1844, a mysterious 10 from 1845-49, 9 again for 1850-53, and then 8 for 1854-1864.

In the end, the cutoff is fairly arbitrary. I chose 7.5 on Polity as the cutoff for democracy, mainly motivated by the desire to have a non-trivial sample of developing country democracies while still maintaining a reasonably high standard for democracy.

III. Cognitive biases and benevolent autocrats

This section develops the claim that many cognitive biases documented in behavioral economics (following the seminal work of Kahneman and Tversky) tend to reinforce beliefs in benevolent autocrats, even if benevolent autocrats did not exist. Of course, it does not logically follow that any belief in benevolent autocrats is the result of a cognitive bias (such an unfounded conclusion would itself reflect the cognitive bias discussed in section a below). Cognitive biases are only one of the possible explanations for such beliefs; another possibility is that theory and evidence support the benevolent autocrat hypothesis, as will be considered in the next section.

This section will also present some simple stylized facts and discuss the way they are interpreted. Many arguments for benevolent autocrats are based on simple correlations or probabilities. They do not address causality or omitted variables, so this section will also not address these issues. Of course, the fallacy that “correlation equals causation” is as important as the fallacies discussed here, but it is already well known compared to some of the more subtle biases discussed below. The fallacies discussed below are very well known to academic economists, so the paper is primarily discussing how they affect a more general audience. However, nor does the paper automatically exclude academics, as Kahneman and Tversky note that the biases affect instincts and intuition so much that even when one formally knows the cognitive error, one can still fall prey to it in discussions based primarily on intuitions. (For example, the present author fails to handle probabilities correctly when informed of a positive test result on a family member for a very rare disease, despite studying carefully the material below.)

a. Reversing conditional probabilities

This well known bias confuses the conditional probabilities $P(A|B)$ and $P(B|A)$. Another way of putting it is that individuals violate Bayes' theorem relating these conditional probabilities by neglecting $P(A)$ -- also known as the "neglecting base rate bias" (Tversky and Kahneman 1982c, 1982d). Baye's theorem shows how the bias is most extreme when $P(A)$ is low relative to $P(B)$:

$$P(A | B) = \frac{P(B | A)P(A)}{P(B)}$$

A recent non-economics example of this was the Washington Post columnist Juan Williams saying "when I get on a plane, I got to tell you, if I see people who are in Muslim garb ... I get worried. I get nervous." Williams appeared to be confusing his belief that "Most terrorists are Muslim" with the probability that "Most Muslims are terrorists." In terms of the Bayesian updating rule above, let A be "terrorist" and B be "Muslim". "Most terrorists are Muslim" implies that $P(B|A)$ is high. However, it does not follow that $P(A|B)$ is high ("Most Muslims are terrorists"); Williams was neglecting the low base rate probability $P(A)$ -- terrorists are rare. He was fired by National Public Radio, which generated a huge outcry about NPR's excessive "political correctness" from people who did not seem very conversant with Bayes' theorem.

In the non-probabilistic world of deductive logic, this is a fallacy known as affirming the consequent. The fallacious reasoning goes: if A then B, I observe B, therefore A. Or to put it another way, it is the schoolboy example of confusing "All whales are mammals" with "All mammals are whales."

We have already seen a similar example in section I when the World Bank Growth Commission reached a conclusion after studying exclusively cases of rapid growth that "Growth at such a quick pace, over such a long period, requires strong political leadership." The Growth Commission was observing a high probability $P(\text{Strong leadership}|\text{Rapid Growth})$. But of course, this is not the relevant probability if one wants to know whether to recommend strong leadership -- one needs instead to know the probability $P(\text{Rapid Growth}|\text{Strong Leadership})$, which turns out to be very different.

This reflects a much more general summary of development experiences in policy-making discussions. Commentators frequently observe that big successes like South Korea, Singapore, Taiwan, and China had or have strong autocrats during their successful periods (as measured by rapid growth), which reinforces a belief in benevolent autocrats. A big growth success is defined as more than 4 percent per capita over 1960-2008, and a big growth failure as less than -0.5 percent average growth over the same period (the first dividing line picks out the usual suspects as successes, the second makes the number of big failures equal to the number of big successes).

We have 124 cases. Table 2 shows the breakdown of big successes and big failures by level of autocracy (defined as in the previous section).

Table 2: # Developing Countries In each category 1960-2008	Big Growth Failure	Not Big Growth Success or Big Failure	Big Growth Success
Autocracy or Flawed Democracy	10	70	9
Democracy	0	12	1

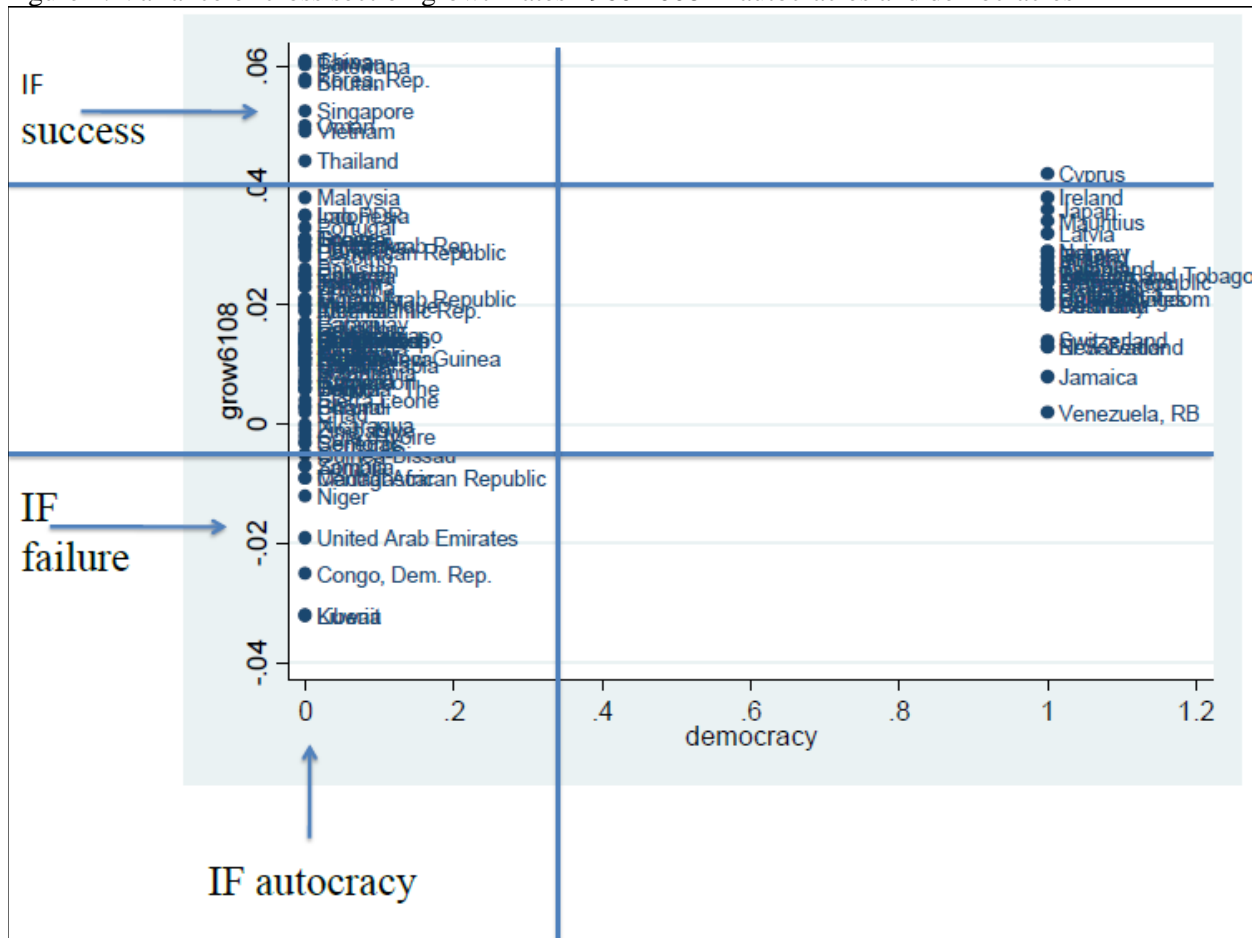
The probability that you are an autocrat IF you are a growth success is 90 percent. This probability seems to influence the discussion in favor of autocrats, as the example of the World Bank statement showed. However, the relevant probability is whether YOU are a growth success IF you are an autocrat, which is only 10 percent.

The reason for the large difference in conditional probabilities in terms of Bayes' Theorem is that major growth success has a low base rate probability, only about 9.8 percent, relative to a large probability of autocracy (87 percent). Correct Bayesian updating of the probability of success on observing an autocrat would have elevated the probability of success only slightly, to 10.1 percent. The fallacy of confusing the probabilities neglects the low base rate in Bayesian terms (or there may simply be a direct confusion between the reverse conditional probabilities).

Why was $P(\text{Autocracy}|\text{Growth Success})$ so high? A well known finding is that the volatility of growth is higher under autocracies than under democracies (Weede, 1996; Rodrik, 2000; Almeida and Ferreira, 2002; Quinn and Woolley, 2001; Acemoglu et al., 2003; Mobarak, 2005; Yang 2008).

As figure 1 shows for the cross-section, conditioning on success only picks up the upper tail of the more diffuse autocracy distribution. Figure 1 shows also that one could have made just as strong an argument associating autocracy with failure by using the wrong conditional probability (all failures are autocracies). The average growth for autocracy is lower in this dataset than democracy (although this has not been a robust result in the literature, which usually finds zero growth effect of autocracy on average). Of course, there also could be reverse causality from high volatility to autocracy. If we did accept a causal interpretation of Figure 2, autocracy still looks like a very risky bet with no higher average payoff than democracy.

Figure 2: Variance of cross section growth rates 1960-2008 in autocracies and democracies



The other, closely related, way to look at volatility is look at the annual standard deviation of growth rates within each country over 1960-2008 (which is the way some of the above studies look at the issue). Autocracies have on average a standard deviation of growth rates 2.3 percentage points higher than democracies; the difference has an extremely high level of statistical significance. This is obviously a contributor to the greater dispersion of growth averages over 1960-2008 in Figure 2 above.

b. Availability heuristic

The availability heuristic identified and empirically confirmed by Tversky and Kahneman (1982b) and others leads to an upward bias of the probability of an event that is very vivid in the subjects' minds. One way this can happen are with an event that is over-reported relative to its actual frequency. A common example is that probability of death from murder is overestimated because of intensive coverage of murders by the media relative to other causes of death that are not as newsworthy (e.g. heart disease). "Availability" refers to how easily a particular event springs to mind in a test subject being asked about the probability of the event.

For our purposes here, the issue is whether successful autocrats are over-reported relative to failed autocrats. The purpose is NOT to test whether over-reporting itself reflects some cognitive bias, since there are many possible reasons for over-reporting some countries. Rather the purpose is just to see whether over-reporting of successful autocrats exists relative to failed ones, which will then influence

the availability heuristic. For the same reason, the results feature the unconditional reporting levels, NOT conditioning on some obvious factors like population size. For the purposes of availability bias, each country is treated as an equally weighted experiment in autocracy and success, it does not matter WHY there is over-reporting of some of these experiments relative to others.

This paper constructed a database of number of mentions of countries in both popular media and academic journals, as well as using an existing database by Das et al. (2010). The tables below report the results for developing countries only.

We get abundant confirmation that successful autocracies are over-reported relative to their failed counterparts, as illustrated in Table 3 with New York Times stories 1960-2008 by country. Again, this paper doesn't attempt to resolve why; big success is simply over-reported relative to big failures, with an unclear role for the autocracy dimension.

Availability bias suggests that the probability of success under autocracy will be exaggerated because of the abundant availability of information on successful autocrats, compared with little notice of failed autocrats.

Table 3:Articles per country (New York Times, 1960 to 2008)

		Growth 1960-2008			Total
		Big Failure	Not Big Success or Big Failure	Big Success	
Democracy, 1960-2008	Autocracy	5,705	14,890	41,952	16,805
	Democracy		16,222	12,132	15,908
	Total	5,705	15,095	38,970	16,685

To test the robustness of the results on availability, we run the same exercise on a variety of popular media, Google Scholar mentions, and academic development journals, as shown in Table 3. Because there are not enough examples of Democracy with Big Success or Big Failure, we limit the exercise to autocracies. We estimate the cross-section equation for the period 1960-2008:

$$\text{Log}(\text{country article counts}_i) = D_{\text{BigFailure}} + D_{\text{NotBigSuccessorFailure}} + D_{\text{Big Success}} + \epsilon_i$$

Table 3 shows the estimated magnitude and statistical significance of $D_{\text{Big Success}} - D_{\text{BigFailure}}$.

The strongest results are with general media very relevant for public policy debates (New York Times and Foreign Affairs) and for the general search engine of Google Scholar. The results are not quite as strong or as large with academic development journals, only bordering on statistical significance. The more general media are probably more relevant for public policy debates, however.

Table 3: Results for article counts mentioning country names, by country in set of growth successes and failures in sample of all autocracies, 1960-2008

<i>Log(# articles 1960-2008, except where otherwise noted)</i>	<i>Log difference in number of articles between success and failure</i>	<i>Standard Error</i>	<i>P-Value</i>	<i>Observations</i>	<i>Multiple by which average articles on success are more numerous than articles on failure</i>
New York Times	1.406	0.647	0.033	84	4.1
Foreign Affairs, keyword search, 1960-Present	1.276	0.623	0.044	86	3.6
Foreign Affairs, topic search, 1960-Present/1	1.462	0.664	0.030	89	4.3
Google Scholar	1.616	0.589	0.007	87	5.0
Journal of Development Economics	0.921	0.411	0.028	86	2.5
Journal of Development Economics (keyword "Growth")	0.831	0.424	0.053	86	2.3
World Development	0.787	0.403	0.054	86	2.2
World Development (keyword: "Growth")	0.799	0.410	0.055	87	2.2
World Bank count of academic articles by country 1985-2005	1.851	0.957	0.057	85	6.4

/1 This category had some zeroes, so the log transformation is $\log(1+\#\text{articles})$

c. Leadership attribution bias

A large literature on the “fundamental attribution error” finds that test subjects tend to attribute an outcome too much to individual personality, intentions, and skill and not enough to situational factors. Some of the early examples of finding were Jones and Harris 1967, who ran an experiment assigning individuals randomly to write pro-Castro or anti-Castro letters. The test subjects observing this said that the pro-Castro letter writers already intended to be more pro-Castro even though they knew assignment was random.

That even random outcomes are attributed to intentions or skill is a striking feature of many experiments. Another early experiment showed the performance of actors doing a task to test subjects (Lerner 1965). The test subjects were told that payments would be given randomly to the actors, unrelated to performance, and the experimenter designed it so that performance was equivalent between all actors. Test subjects gave a higher performance rating to those actors receiving payments, even though they knew the payments were random.

Langer (1982) further surveyed and confirmed observers’ tendency to view uncontrollable outcomes (including chance) as if they were controlled by the agents (sometimes the agents are the observers themselves) in psychological experiments. She called this the “illusion of control.”

This bias specifically shows also in attributing too much of a group outcome to a leader rather than characteristics of the group. Weber et al. (2001) ran an experiment of two groups trying to solve coordination problems in which one of each group was randomly designated the “leader.” One of the groups was larger than the other, and this was the true cause of differential success at solving coordination problems. However, observers spuriously attributed the different outcomes to “leadership effectiveness.”

Wolfers (2007) shows a similar bias in how voters attribute outcomes to governors of US states. Incumbents are blamed even for outcomes that are obviously beyond their control, such as a fall in oil prices in an oil-producing state. Patty and Weber (2007) have a similar result that “voters over-emphasize outcomes relative to the actual ability of the leader to influence outcomes.” (Of course, this kind of voter irrationality could itself be an argument in favor of autocracy, which will be discussed more below. For the moment, take this as a large scale experiment confirming leadership attribution bias.)

Another related literature regards the excessive attribution of team success or failure in sports to the coach. Here there has been a long, entertaining, and often not very rigorous literature that finds this attribution is mostly spurious, as most studies show that firing coaches fails to improve team performance (Allen et al. 1979, Brown 1982, Gamson and Scotch (1964), Fabianic 1994, Koning 2003, Mcteer et al. 1995) Another large literature discusses the same question regarding CEOs of corporations. Fisman et al. (2010) find that again there is excessive attribution of corporate success to CEOs, as firing the CEO fails to improve performance.

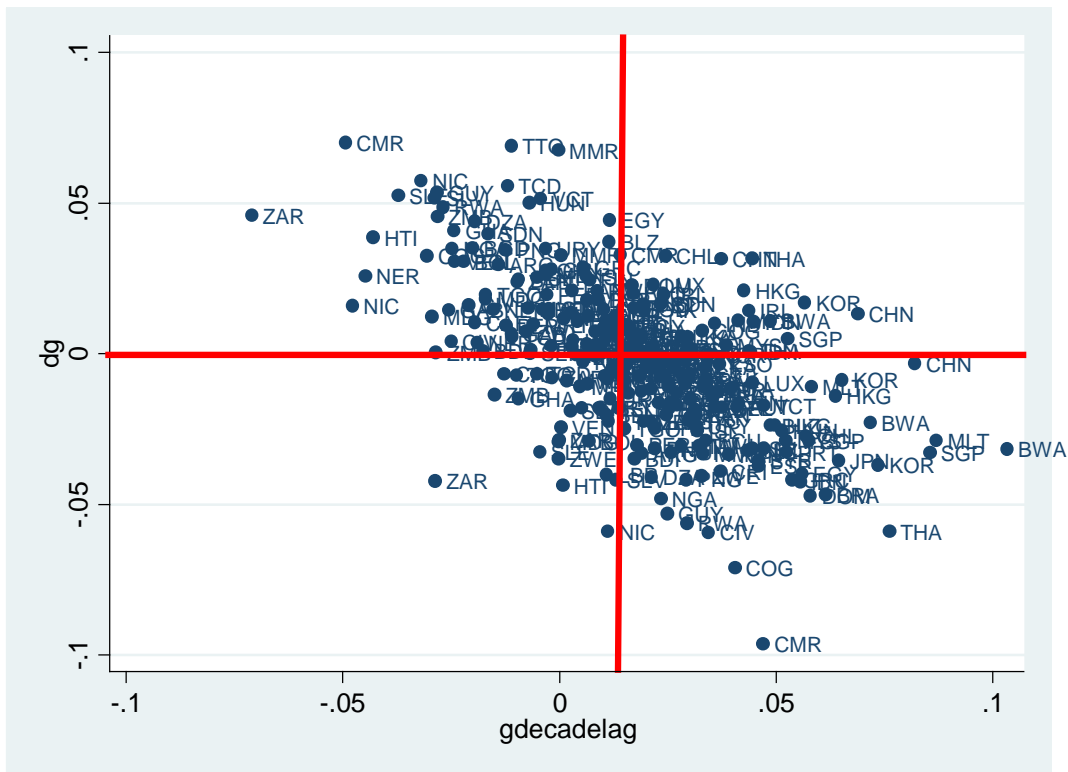
d. The “Hot Hand” fallacy

The “Hot Hand” fallacy (Gilovich, Vallone, and Tversky 2002) is the false perception that a basketball player who has just made a string of baskets is more likely to make the next basket than his average skill would predict. It is another form of attribution bias, in that it attributes the streak to a shift in the player’s skill rather than recognizing that random sequences feature streaks. The counterpart story for benevolent autocrats is that even if a streak of high growth were random, it would likely be attributed to the skill of somebody involved in the outcome. Given the leadership attribution bias, this is likely to be the leader in power at the time.

Another way of stating this bias is that it fails to appreciate regression to the mean (Kahneman and Tversky 1982d) – that unusually good performance is temporary and will like revert to average performance. Easterly, Kremer, Pritchett, and Summers 1993 and Hausmann, Rodrik, Pritchett 2007 showed growth rates to feature low persistence and high mean reversion. If current and past growth is attributed to an autocrat, the Hot Hand fallacy will make things even worse by giving him credit for the spuriously predicted high growth in the future as well.

Moreover, this problem is worse for autocrats than for democrats. Given the higher volatility of growth under autocracy shown above, they are likely to have larger decreases in growth as mean regression kicks in.

Figure 3: Change in decade growth rates against previous decade’s growth average, 1965-2005



e. The “Law of Small Numbers”

A closely related issue is what Tversky and Kahneman (1982a) called the “Law of Small Numbers.” In contrast to reliance on the Law of Large Numbers to obtain precision on averages, the “Law of Small Numbers” draws conclusions prematurely on too small a sample. Again, this will be worse with autocracy than with democracies, as the former have a larger transitory component to their growth rates.

To confirm this using another method, consider a standard decomposition of the annual growth rates for country i and period t into a permanent and transitory component for a panel of countries:

$$g_{it} = \mu_i + \varepsilon_{it}$$

Using random effects (fixed effects give very similar results) for a balanced panel of 84 countries 1960-2008, we can estimate the standard error of the permanent and transitory components:

Table 4: Random effects regression for GDP per capita growth, balanced sample, annual data 1960-2008

	Autocracy	Democracy
Average growth	0.0162	0.0231
Standard error of $\mu(i)$	0.0158	0.0066
Standard error of $\varepsilon(i,t)$	0.0551	0.0286
# countries	64	22

Autocracies have greater dispersion of permanent growth rates than democracies. However, they also have high standard errors for the annual transitory component (this is just another form of the previous result in section a that autocracies have higher standard deviations of growth rate time series.) Autocracies standard error of $\varepsilon(i,t)$ is so high that even averaging over a relatively long period is going to leave a non-trivial transitory component.

It is common practice to declare a country a “growth miracle” after a few years of high growth. For example, Chile under Pinochet was declared a “growth miracle” twice: first from 1977-1981, and again from 1984-89 (in between the two was a severe financial crisis and recession), with about 6 percent per capita growth in both periods. The transitory component of a five year average under autocracy has the 95% confidence interval $\{-.063,.063\}$. Flexibly selecting on any short interval of high growth under autocracy as a “growth miracle” is likely to capture a high transitory realization. Calling it a “miracle” ignores this problem, apparently suffering from the “Law of Small Numbers.”

These results help understand why short periods of rapid growth are both surprisingly common and surprisingly inexplicable. As the Hausmann, Pritchett, Rodrik (2005) study of “Growth accelerations” found, “Of the 110 countries included in the sample, 60 have had at least one acceleration” And yet “most growth accelerations are not preceded or accompanied by major changes in economic policies,

institutional arrangements, political circumstances, or external conditions...those determinants do a very poor job of predicting the turning points.” They define a growth acceleration as being a change of 2 percentage points per capita from one seven year period to the next, and found 81 of them in the data. While they found both democratic and autocratic growth accelerations, this paper finds the latter in their database (using the classification of autocracy in this paper) to be larger: an acceleration of 5.2 percentage points, compared to 3.2 percentage points for democracies. This is the stuff of mostly spurious popular reports of “growth miracles.”

Surprisingly, this is still a non-trivial problem even with much longer time periods. The World Bank Growth Commission identified the successes that it would study as those that had high growth over any 25 year period, creating a selection bias towards having a large transitory component (not only by country, but also by endogenous selection of time period). Since autocracies have larger transitory variance than democracies, this procedure was very likely to pick out autocratic successes. Indeed, only one of the thirteen successes in the Growth Commission report fit the definition of democracy used in this paper (Japan, 1950-1983)⁵. The 25 year average of the transitory component for autocracies has a 95% confidence interval of (-.023.023).

f. Action bias

Another reason for some preferences for benevolent autocrats is that they seem to provide a way to act forcefully on development outcomes. An autocrat with a plan for development is always going to be more appealing to those who wish for the end of poverty than a democratic system that seems to evolve gradually and unpredictably towards that goal (without much role for expert planning). As James Buchanan said, policy-oriented economists and other public intellectuals may prefer to be “proffering policy advice as if they were employed by a benevolent despot.”

The action bias has an amusing demonstration in one very narrow circumstance by how soccer goalkeepers defend against penalty kicks (Bar-Eli et al. 2007). Empirically, the most successful strategy is for the goalkeeper not to act at all: to stay unmoving in the middle. However, a surprisingly large number of goalkeepers prefer to act instead, guessing which way the ball is going and diving to that side.

III. More Formal Theory and Evidence

Although much of the discussion on benevolent autocrats seems to be driven by very simple models and stylized facts, it is worth examining the concept from the viewpoint of the more formal literature on the theory and evidence on autocracy.

⁵ Hong Kong and Malta were successes that Polity IV does not cover. Freedom House coverage begins in 1973. Freedom House classified Malta (whose successful period was identified as 1963-1994) as “partly free” from 1982-1987, otherwise “free”; Malta became independent in 1964. Hong Kong was never independent but appears on Freedom House’s list of territories, where it was classified as “partly free” in all periods except a “free” classification in 1975-1979.

1. Theory of autocracy

Policy-makers' discussions of benevolent autocrats assume a very simple theory where the autocrat chooses policies and then implements them. In other words, they assume an unconstrained autocrat, that the outcomes observed under autocracy reflect the intentions of the autocrat.

There is hardly space here to do a general survey of the theory of autocracy, but a few examples will illustrate how many theories are far from the world of the unconstrained autocrat who simply realizes his own preferences. The classic book by Bueno de Mesquita et al. (2003) introduced the concept of a "selectorate" that chooses an autocratic leader and can remove him. Acemoglu and Robinson (2005) have a similar idea, with the key dimension of an autocracy not the absence of an electorate but a much smaller one limited to the elite, but whom still hold the autocrat accountable to their interests. An additional constraint on the autocrat in Acemoglu and Robinson is the threat of revolution by those excluded from the "selectorate," so some autocratic choices reflect concessions to potential rebels rather than the desired policies of the autocrat. Besley and Kudamatsu (2009) develops these stories further. Factors like inequality, natural resource revenues, and institutional rules followed by the selectorate influence the political economy outcome under autocracy, although space prevents spelling this out in detail. One prediction that is ironic for the "benevolent autocrat" idea is that autocracy performs best when the individual who occupies the leadership position matters least. Besley, for example, shows theoretically how "autocratic government works well when the power of the selectorate does not depend on the existing leader remaining in office."

These stories make it unlikely that outcomes correspond to the intentions of the individual autocratic leader. The outcomes will also reflect the constraints imposed by the selectorate and by the threat of revolution. Of course, the intentions of the autocrat are mostly unobservable anyway. Intentions are usually just assumed to correspond to outcomes, an assumption that does not fit the above theories of autocracy.

Moreover, these theories raise the possibility that even if intentions of the leader did coincide with outcomes, there may be other explanations than simply the effect of direct actions by the leader. A system that produces a well-intentioned autocrat may have many other positive features that affect outcomes. Similarly, if a particularly destructive and evil leader is in power, this could be a symptom of a system that has toxic characteristics that may themselves directly affect outcomes.

Chaves and Robinson (2010) address similar issues about preferences and outcomes concerning civil war. The analogous naïve model is that civil war is a contest between two parties with different preferences, so the outcome will reflect the preferences of the winning side. Chaves and Robinson 2010 discuss (both theoretically and in case studies of Sierra Leone and Colombia) how the outcome may not reflect the initial preferences of either side, since the war mobilizes new groups who may alter the outcome. This principle of unintentional consequences has long been known in historical studies of civil wars. More eloquently, Abraham Lincoln said about the US Civil War, "Neither party expected for the war, the magnitude, or the duration, which it has already attained...Each looked for an easier triumph, and a result less fundamental and astounding."

Earlier theories of autocracy had been closer to the naïve model in which the autocrat is unconstrained (Olsen 2000). Yet even these theories had the autocrat maximizing in response to circumstances. Conditions under which the autocrat could expect to remain in power (the “stationary bandit”) led to better choices than those in which his tenure would be short (the “roving bandit”).

A more general point is that if the outcome even under autocracy is the endogenous general equilibrium result of a complicated game among many diverse players, there are many possibilities for outcomes to diverge from intentions of any one player. As Kenneth Arrow said, “[T]he notion that through the workings of an entire system effects may be very different from, and even opposed to, intentions is surely the most important intellectual contribution that economic thought has made to the general understanding of social processes.”

These theories of autocracy are helpful in explaining under what situations it could be consistent with rapid growth. Yet policy-makers’ discussions of benevolent autocrats stress benevolent intentions of individual personalities rather than situational factors, which could reflect the fundamental attribution error discussed above. Cognitive biases seem to affect the consumption of theories as well as stylized facts.

Why does it matter whether a successful autocracy is the result of intentions or circumstances? In the former case, one trusts the autocrat to do good things no matter what the circumstances. In the latter case, the effect of any action by others could alter circumstances in either direction. For example, foreign aid donors trust the “benevolent individual” to use the money wisely. But aid could instead make the donor less accountable to the selectorate or potential revolutionaries, and thus lead to worse political economy outcomes.

To give another example, the benevolent individual model may see any ill-chosen policy as the result of ignorance, and so the answer is simply more expert advice and education. For example, the World Bank Growth Commission (2010) announced on the back cover of one of its most recent reports: “The Commission’s audience is the leaders of developing countries.” Aid agency and think tank studies often seems geared to finding the ideal advice for an unconstrained leader, with little or no consideration of the political economy of decision-making.

2. Knowledge problems

The naïve discussion of benevolent autocrats seems to assume omniscience as well as omnipotence. If we assume the outcome of high growth reflects the intention of the autocrat, he must also know HOW to raise growth. Even if the problem was “educating the autocrat,” what is going to be on the syllabus?

Yet the last decade has been marked by an increasing number of economists admitting that we have little reliable knowledge on how to increase growth: “there aren’t too many policies that we can say with certainty ... affect growth.” (Harberger 2003) A forum called the Barcelona Development Agenda (2004) –which included academic economists like Blanchard, Calvo, Fischer, Frankel, Gali, Krugman, Rodrik, Sachs, Stiglitz, Velasco, Ventura, and Vives -- said “there is no single set of policies ... to ignite

sustained growth.”⁶ Rodrik 2007 said “experience ...frustrated the expectations ...{that} we had a good fix on the policies that promote growth.” Banerjee (2009) suggests “it is not clear that the best way to get growth is to do growth policy of any form. Perhaps making growth happen is ultimately beyond our control. ... Perhaps we will never learn where {growth} will start or what will make it continue.”

The Growth Commission report that stressed enlightened leadership also confessed ignorance about how to raise growth:

This report is the product of two years of inquiry and debate, led by experienced policy makers, business people and two Nobel prize-winning academics, who heard from leading authorities on everything from macroeconomic policy to urbanization. If there were just one valid growth doctrine, we are confident we would have found it.

Instead the report said: “It is hard to know how the economy will respond to a policy, and the right answer in the present moment may not apply in the future.”

The uncertainty surrounding policy recommendations by economists has been getting new attention from the profession outside of development and growth. Manski (2011) notes that “Analyses of public policy regularly express certitude about the consequences of alternative policy choices. Yet policy predictions often are fragile...” The financial crisis since 2008 also caused many doubts about confident policy recommendations by economists. Lo and Mueller (2010) note the various levels of uncertainty possibly afflicting general equilibrium outcomes, and suggested “model uncertainty” as a major problem: “we are in a casino that may or may not be honest, and the rules tend to change from time to time without notice.” If economists don’t know how to raise growth, then on what basis does the autocrat know how? Some of those who make the above “general ignorance” statements recommend instead a context-specific set of ideas on how to raise growth. But the knowledge problem is even more severe if general rules cannot be tested in a large sample, but there is a different rule for every observation.

Of course, democratic leaders have similar knowledge problems at the center. Moreover, voters choosing policies and leaders have their own well-known incentives to under-invest in knowledge of public policy, as well as the possibility of systematic biases (Caplan 2007) – including cognitive biases (an example was given above). The difference is arguably that a democracy does not require as much centralized decision-making, because democratic rights make possible a decentralized system of feedback and accountability for many government actions.

Getting back to centralized knowledge, the Growth Commission suggested an experimental approach might work, as does Rodrik (2005). Learning what raises the permanent growth rate by trial and error is going to be difficult, however, when the annual growth rates contain a large transitory component. The growth rate feedback each year from the experimental approach is going to contain little signal relative to noise. Moreover, there is only one aggregate outcome and many things are changing at once in any real world policy change. It is very unclear how a benevolent autocrat would solve these severe knowledge problems.

⁶ <http://www.bcn.es/forum2004/english/desenvolupament.htm>

3. Evidence on higher variance of autocracies

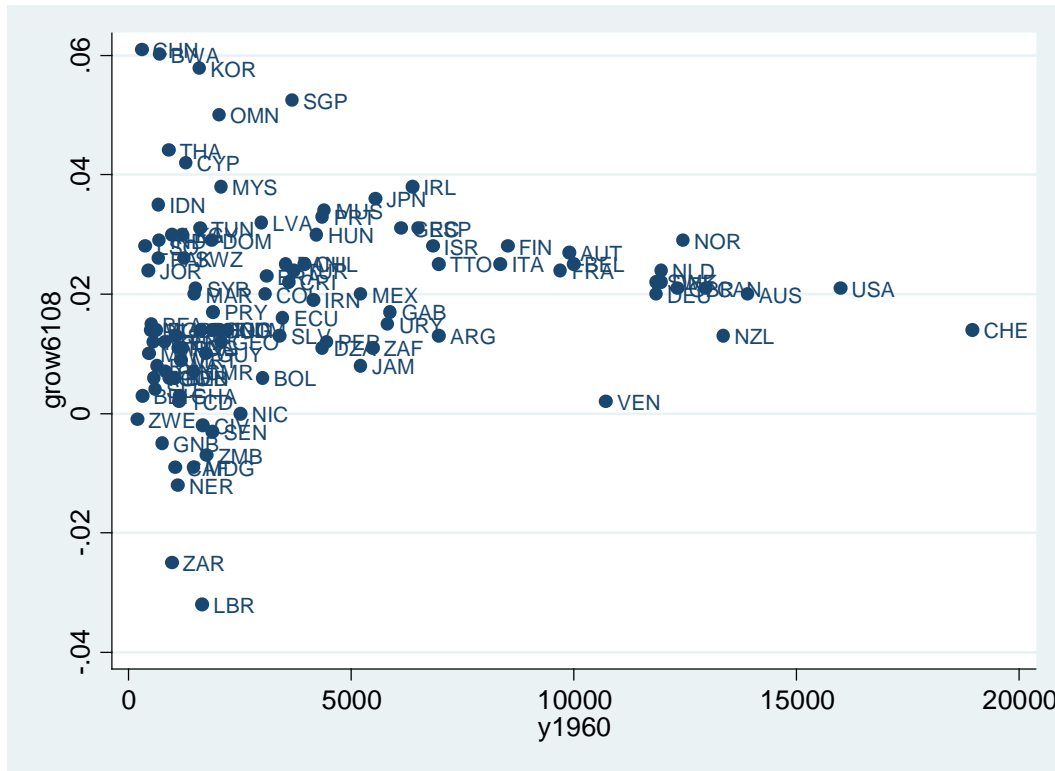
The discussion above on the higher variance of growth under autocracies presumed a monocausal relationship. However, growth variance and autocracy are both endogenous variables. Moreover, autocracy is correlated with other factors that could also predict higher variance of growth rates, such as low income per capita, ethnic heterogeneity, technology adoption, cultural values, history of statehood, frequency of civil conflict, level of development of the financial sector, or diversification of the economy away from risky commodities. It is also highly correlated with other institutional features, such as corruption.

However, Sah 1991 interprets the high variance in a way common to many discussions:

It is not suggested here that highly centralized societies cannot have very good performances. Such a society may get a preceptor like Lee Kwan Yu of Singapore or the late Chung Hee Park of South Korea, who have been viewed as having made substantial contributions to their societies. By the same token, such a society may get a preceptor like Idi Amin of Uganda, with correspondingly opposite consequences. ... an effect of human fallibility is that more centralized societies will have more volatile performances.

Rather than individual leaders, it could be that some of the variance (and thus some of the successful outliers) could be attributable to other things like the opportunities for convergence in a poor economy, or a boom in the commodity in which a poor economy is specialized. The classic paper by Acemoglu and Zilibotti 1997 has a persuasive story for why diversification only happens in richer economies, and they cite the high variance of low income economies as supporting evidence (confirmed with the dataset for this paper in the figure below). Part of the story uses financial deepening as countries get richer as an important channel by which diversification occurs. Since autocracy is highly correlated with both low income and little financial deepening, it may be proxying for the latter in an unconditional association with high growth variance.

Figure 4: Initial Income, 1960, and the Variance of Growth Rates, 1960-2008

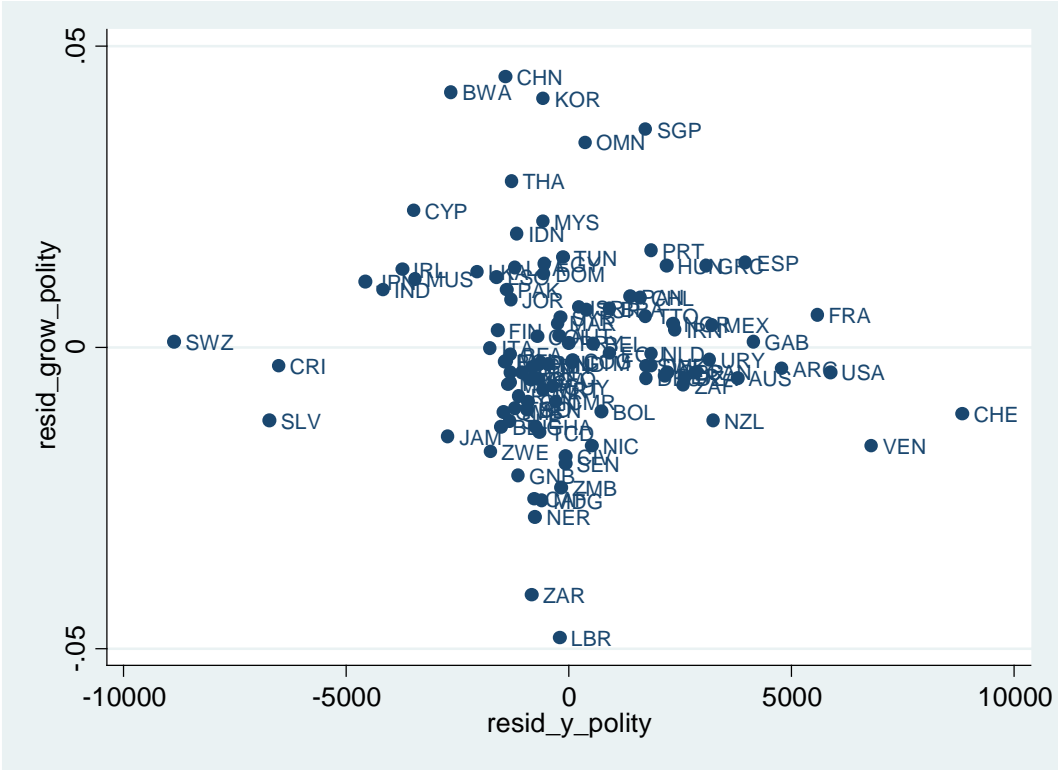


For what's it worth, the empirical literature on variance of autocracies does control for per capita income, and they find the autocracy effect robust and the income effect weak (Weede 1996, Rodrik 2000, Acemoglu et al. 2003). However, we know from the unhappy history of the cross-country growth literature that robust findings are not so robust when there is a limited sample and many possible controls (not to mention interaction effects among the controls). Yang 2008 found, for example, the democracy effect on variance to depend on ethnic heterogeneity. Moreover, few of the studies address causality, and when they do they instrument only for autocracy, leaving income as an endogenous right hand side variable (understandable, since successfully instrumenting for two RHS variables is rarely possible, but still invalid to have a causal model of variance).

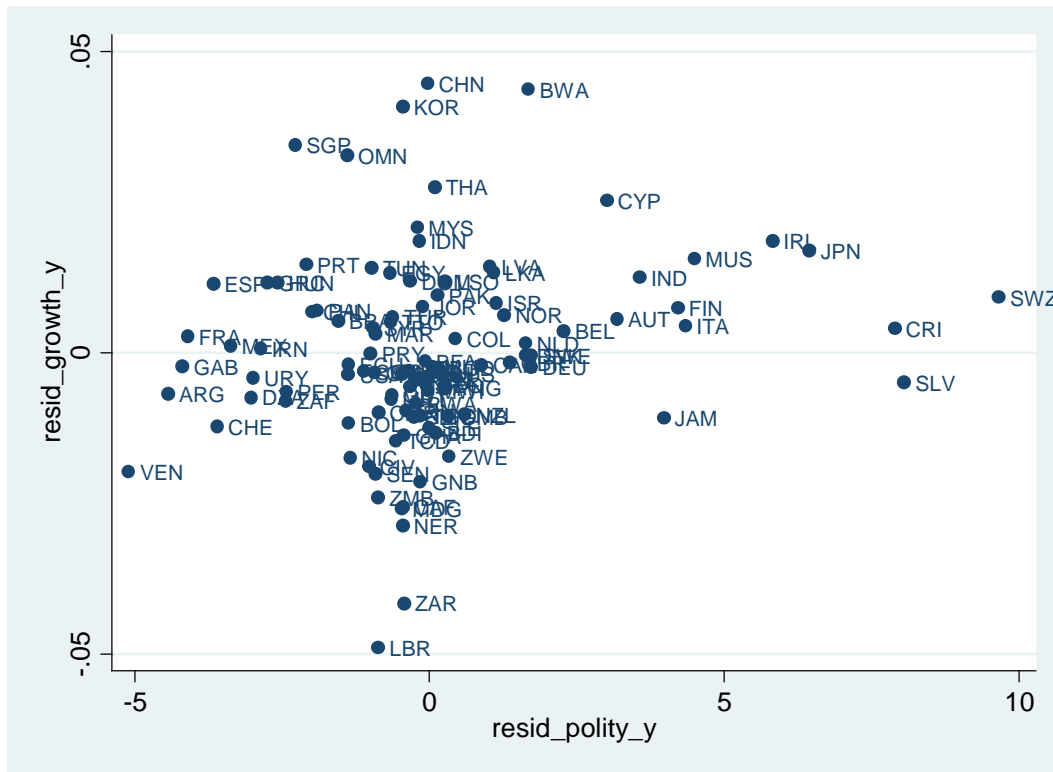
Using the stylized facts in this paper to illustrate these problems, the next two graphs show the partial scatters from regressing growth on both income and democracy. The very high variance countries are in the middle, not among those with an imbalance between income and democracy in either direction. Hence these graphs are of little help in distinguishing between whether the high variance effect is due to low income or to autocracy.

Figure 5: Partial scatters between growth, democracy, and income

Panel a: partial scatter between growth (on vertical axis) and income (on horizontal axis), controlling for democracy



Panel b: partial scatter between growth (on vertical axis) and democracy (on horizontal axis), controlling for income



In sum, circumstantial determinants of high variance in autocracies deserve at least as much attention as personality based explanations.

4. Evidence that Leaders Matter

Jones and Olken (2005, 2009) have produced some of the most important and careful evidence of the exogenous effects of individual autocrats. The random death of an autocratic leader changes the five-year average growth rate by a significant amount (either positively or negatively). Deaths of democratic leaders have no statistically significant effect. Successful assassination of an autocrat raises the probability of a transition to democracy by 13 percent. Assassination is obviously endogenous but they achieve identification through the exogenous difference between successful and failed assassination attempts.

So what is this effect actually measuring? Jones and Olken (2005) mostly seem to interpret their results as reflecting a change in intentions and actions of different autocrats. Democracy prevents bad autocrats from acting on their intentions but also may prevent benevolent autocrats from achieving their intentions of high growth:

Democracies may be able to prevent the disastrous economic policies of Robert Mugabe in Zimbabwe or Samora Machel in Mozambique; however, they might also have constrained the

successful economic policies of Lee-Kwan Yew in Singapore or Deng Xiaoping in China. (Jones and Olken (2005))

More generally, the authors cast their findings in terms of a large debate:

this research also informs a separate and very old literature in history and political science that considers the role of national leaders in shaping events. Deterministic views suggest that leaders have little or no influence, while the Great Man view of history, at the other extreme, sees history as the biographies of a small number of individuals. Tolstoy believed this debate methodologically impossible to settle [Tolstoy 1869]. Using exogenously-timed leader deaths, the analysis in this paper presents a methodology for analyzing the causative impact of leaders. We reject the hypothesis that leaders are incidental. We find that leaders do matter, and they matter to something as significant as national economic growth.

Jones and Olken (2009) repeat the message: “our findings suggest ‘agency at the top.’” In a subsequent survey, Jones (2009) suggests that their findings reflect intentional choices that are fully realized: “leaders can be actively good for growth – e.g. ...choosing pro-growth trade policies... Lee Kwan Yew of Singapore might suggest such a view” and “Since leaders matter, the decisions they make – i.e., their policies – appear to matter.”

However, the above theories of autocracy suggest some alternative views. What they are measuring may be the effect of an unexpected transition on the systemic outcome of the selectorate interacting with each other, a change in the selectorate, or a change in the threat of revolution and the response to such a threat. Hence, the Jones-Olken finding does not necessarily correspond to the change in intentions from the previous autocrat to his successor. Moreover, the systemic effect of an accidental transition could either change the outcome relative to the counterfactual of no leader death, or simply change the timing of an outcome that would have happened anyway.

More generally, the autocrat is one player in a game of many players reacting to each others’ moves. To take one example stressed by Jones and Olken (2005), there was a dramatic change from the growth under Samora Machel in Mozambique, who first took power in 1975, to the growth under his successors after his death in 1986. However, even a cursory list of other players during Machel’s reign would include the Portuguese settlers who dominated the colonial economy but left en masse in 1975, the RENAMO rebels who engaged in systematic destruction after 1975, the regimes of Rhodesia and South Africa supporting RENAMO, the Soviet Union who supported Machel, the end of the white majority regimes in Rhodesia and South Africa diminishing support for the rebels which led to the end of the civil war in 1992, the World Bank and IMF becoming important supporters of Machel in 1983-84 while Soviet aid ended, and all foreign aid donors sharply increasing aid after 1987 first to 30 percent of GDP and peaking at 81 percent of GDP in 1992. (This author is skeptical of growth effects of aid, but is just pointing out that there are many claimants to Mozambique’s growth success, including aid donors.)

To take another compelling example, the authors detect a large increase in China’s growth rates from Mao Tsetung to Deng Xiaoping. As discussed above, an alternative narrative to the autocrat mattering personally would stress the selectorate rather than the individual. Mao seems to be a clear example where

the previous selectorate lost power on Mao's death (e.g. the downfall of "the Gang of Four"), the type of autocracy where Besley (2010) predicted worse outcomes. Although Jones and Olken also show Deng's death later was associated with a fall in growth, it was temporary. Another possible narrative is that China has now switched to a selectorate that does not change with individual leaders – satisfying the Besley and Kudamatsu (2009) condition for better performance of an autocracy.

Although the authors are careful to note that these examples are only illustrative and the real result is purely statistical, compelling examples like Sekou Toure, Samora Machel, Mao, and Deng do color interpretation of a result. Hence, it is worth pointing out several counter-examples in their results go against the story. Sani Abacha of Nigeria is not usually considered a benevolent autocrat, but his death (viewed positively enough in Nigeria to be labeled the "coup from heaven") corresponded to the largest positive growth effect in the sample. Other unlikely candidates on the positive side of the ledger (i.e. decrease in growth after death) are Gamal Abdel-Nassar of Egypt, Leon M'ba of Gabon, and Omar Torrijos of Panama. On the negative side of the ledger (increase in growth after death) are autocrats with more positive images like Felix Houphouet-Boigny of Cote d'Ivoire and Jomo Kenyatta of Kenya. Obviously any statistical result fails to fit perfectly and will generate "counter-examples;" these are cited here only as balance relative to the examples that do fit the story, as well as a very informal check how well the estimated effects correspond to priors on individual leaders.

Aside from this discussion, are the magnitudes in Jones-Olken (2005) enough to explain the "benevolent autocrat" outcomes? The magnitudes of the effects they find are non-trivial – "a one standard deviation change in leader quality leads to a growth change of 1.5 percentage points." This is from the five year period preceding the leader's accidental death to the five years after, controlling for year and country effects.

Assessing this magnitude depends on the degree to which the growth effect of the leader death is temporary or permanent. As discussed above, growth displays strong mean reversion. To examine how important regression to the mean might be in the database after leader deaths, this paper uses the Jones-Olken data set of leader deaths and growth rates to assess the relationship between $g(t,t+5)$ and $g(t+5,t+10)$, where t marks the date of the leader's accidental death. Regressing the first on the second across the set of episodes of leader deaths, there is a statistically significant coefficient of .35, implying that .65 of the growth deviation from the world mean disappears in the following five year period. Hence, the effect of 1.5 percentage points would fade out fairly rapidly. It thus falls short of explaining much of the frequently-cited "benevolent autocrat" observations in figure 1 above, where growth is 3-4 percentage points higher than the world mean over a period of 48 years.

IV. Conclusion

This paper has suggested a number of cautions about jumping too quickly to benevolent autocrat explanations of growth successes. The benevolent autocrat story has been around for a long time and has proved very adaptable to many different political motivations. The interaction between well-known cognitive biases and stylized facts would predict beliefs in benevolent autocrats even if they did not exist. The theory implied by a benevolent autocrat story is naïve relative to modern theories of autocracy, and it

presumes an implausible level of knowledge by autocrats. The principal empirical paper showing that “leaders matter” is consistent with many other interpretations besides that of benevolent autocrats.

This paper has repeatedly cautioned that these arguments do not automatically disprove the benevolent autocrat story. People who have certain political motivations and cognitive biases are likely to believe in benevolent autocrats. It does not follow that people who believe in benevolent autocrats have political motivations and cognitive biases. (Equating the two would itself be a cognitive bias.)

The benevolent autocrat story for any one autocrat and growth outcome is ultimately non-falsifiable: there is just one observation and many possible stories. How to decide what to believe? One default this paper could suggest is that based on values: democratic rights are an end in themselves, while autocracy is not. This suggests putting the burden of proof on the benevolent autocrats to show that they produce material payoffs that might offer a tradeoff with democratic rights. This paper argues the benevolent autocrats fail to meet this burden of proof.

Bibliography

- Acemoglu, D., Johnson, S., Robinson, J., Thaicharoen, Y., 2003. Institutional causes, macroeconomic symptoms: volatility, crises and growth. *J. Monetary Econ.* 50, 49–123.
- Acemoglu, Daron and James Robinson, 2005, *Economic Origins of Dictatorship and Democracy*, Cambridge University Press, Cambridge UK
- Acemoglu, Daron and Fabrizio Zilibotti, Was Prometheus Unbound by Chance? Risk, Diversification, and Growth. *The Journal of Political Economy*, Volume 105, Issue 4, August 1997, 709-751.
- Almeida, H., Ferreira, D., 2002. Democracy and the variability of economic performance. *Econ. Polit.* 14, 225–245.
- Bar-Eli, Michael Ofer H. Azar, Ilana Ritov, Yael Keidar-Levin, Galit Schein, Action bias among elite soccer goalkeepers: The case of penalty kicks, *Journal of Economic Psychology*, Volume 28, Issue 5, October 2007, Pages 606-621
- Besley, Timothy and Masa Kudamatsu, “Making Autocracy Work”, in Elhanan Helpman (ed) *Institutions and Economic Performance*, Cambridge: Harvard University Press, 2009.
- Birdsall, Nancy and Francis Fukuyama, *The Post-Washington Consensus: Development After the Crisis*, *Foreign Affairs*, March-April 2011, pp. 45-53.
- Bueno de Mesquita, Bruce, Alastair Smith, Randolph M. Siverson, and James D. Morrow, *The Logic of Political Survival*, Cambridge, MASS: MIT Press, 2003.
- Chaves, Isaías N. and James A. Robinson, *The Political Consequences of Civil Wars*, mimeo, Harvard University, November 2010.
- Caplan, Bryan. *The Myth of the Rational Voter: Why Democracies Choose Bad Policies*. 2007. Princeton, NJ: Princeton University Press.
- Collier, Paul. 2009. *Wars, Guns, and Votes*. Harper 2009.
- Corvalan, Alejandro. *From Income to Democracy*, December 2010, NYU mimeo
- Gilovich, Thomas, Robert Vallone, and Amos Tversky, “The Hot Hand in Basketball: On the Misperception of Random Sequences”, in Thomas Gilovich, Dale Griffin, and Daniel Kahneman, *Heuristics and Biases: The Psychology of Intuitive Judgment*, Cambridge University Press: Cambridge UK, 2002.
- Halper, Stefan. *The Beijing consensus: how China's authoritarian model will dominate the twenty-first century*, Basic Books, 2010
- Jones, E. E. and Harris, V. A. (1967). The attribution of attitudes. *Journal of Experimental Social Psychology*, 3, 1-24

- Kahneman, Daniel and Amos Tversky, "On the psychology of prediction," in Daniel Kahneman, Paul Slovic, and Amos Tversky, editors, *Judgment under uncertainty: heuristics and biases*, Cambridge University Press: Cambridge UK, 153-160,1982
- Langer, Ellen J. "The illusion of control," in Daniel Kahneman, Paul Slovic, and Amos Tversky, editors, *Judgment under uncertainty: heuristics and biases*, Cambridge University Press: Cambridge UK, 231-238,1982
- Lerner, Melvin J., Evaluation of performance as a function of performer's reward and attractiveness, *Journal of Personality and Social Psychology*, Volume 1, Issue 4, April 1965, Pages 355-360
- Lo, Andrew W. and Mark T. Mueller, *WARNING: Physics Envy May Be Hazardous To Your Wealth!* Mimeo, MIT, March 2010
- Manski, Charles F. ,*POLICY ANALYSIS WITH INCREDIBLE CERTITUDE*, Department of Economics and Institute for Policy Research, Northwestern University, February 2011
- Olsen, Mancur. *Power and Prosperity: Outgrowing Communist and Capitalist Dictatorships*, Oxford University Press, 2000
- PERSSON, TORSTEN AND GUIDO TABELLINI, Democratic capital: The nexus of political and economic change, *American Economic Journal: Macroeconomics*, 2010.
- Rodrik, Dani "Institutions for High-Quality Growth: What They Are and How to Acquire Them," *Studies in Comparative International Development*, vol. 35, no.3, Fall 2000. NBER Working Paper version
- Rodrik, Dani "Growth Strategies," in P. Aghion and S. Durlauf, eds., *Handbook of Economic Growth*, vol. 1A, North-Holland, 2005.
- RODRIK, DANI AND ROMAIN WACZIARG, Do Democratic Transitions Produce Bad Economic Outcomes? *American Economic Review Papers and Proceedings*, Vol. 95, No. 2, May 2005.
- Sah, R.K., 1991. Fallibility in human organizations and political systems. *J. Econ. Perspect.* 5, 67–88.
- Tversky, Amos and Daniel Kahneman, "Belief in the Law of Small Numbers," in Daniel Kahneman, Paul Slovic, and Amos Tversky, editors, *Judgment under uncertainty: heuristics and biases*, Cambridge University Press: Cambridge UK, 23-31,1982a
- Tversky, Amos and Daniel Kahneman, "Availability: A heuristic for judging frequency and probability," in Daniel Kahneman, Paul Slovic, and Amos Tversky, editors, *Judgment under uncertainty: heuristics and biases*, Cambridge University Press: Cambridge UK, 163-178,1982b
- Tversky, Amos and Daniel Kahneman, "Evidential impact of base rates," in Daniel Kahneman, Paul Slovic, and Amos Tversky, editors, *Judgment under uncertainty: heuristics and biases*, Cambridge University Press: Cambridge UK, 153-160,1982c
- Weede, E., 1996. Political regime type and variation in economic growth rates. *Constitutional Polit. Econ.* 7, 167–176.
- World Bank Growth Commission, *The Growth Commission Report*, Washington DC, 2008.

Yang, Benhua. Does democracy lower growth volatility? A dynamic panel analysis, *Journal of Macroeconomics* 30 (2008) 562–574