Context and Individual Attitudes:
Political Learning and Democratic Commitment in New Democracies

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Abstract: While scholars have long argued that mass commitment to democracy is critical for the consolidation of new democratic regimes, existing studies of the determinants of democratic support at the individual level are largely disconnected from the macro level outcomes that serve to motivate such studies. To address this challenge, this article proposes a new lifetime learning model that posits that democratic attitudes result from the lifetime accumulation of experience with macro contextual factors that shape the socialization of values and evaluations of government performance. Empirical tests of the theoretical framework using survey data from 18 Latin American countries underline the profound importance of economic modernization, economic growth, protest, and violent civil conflict in shaping citizens attitudes over their lifetimes. Together, the results underscore the manner in which the theoretical framework can help reconnect the study of individual attitudes with macro level outcomes.

INTRODUCTION

Scholars have long argued that the development of mass commitment to democracy—defined as an unconditional preference for governments selected through inclusive, contested elections over non-democratic alternatives (Dahl 1971; Rose Mishler, and Haerpfer 1998)—is important for nascent democratic regimes, since democratic consolidation requires that democracy becomes the "only game in town" not only among elites, but also within mass publics (Linz and Stepan 1996, ch. 1).[1] Although a large literature has emerged to explain how citizens in new democracies become more or less committed to the basic features of democratic politics, leading analyses of the determinants of attitudes at *the individual level* are in many ways disconnected from the *national level* relationships that motivate such studies in the first place. The objective of this article is to propose and test a new theoretical model that helps overcome this challenge and explain why democratic commitment varies not only among individuals, but also across countries, all within a single integrated theoretical framework. In doing so, this paper seeks to illuminate the dynamic relationship between macro level factors and individual attitudes, thereby helping bridge the divide between studies of public opinion and aggregate political outcomes.

Leading analyses of democratic attitudes, which emphasize the importance of values socialization (e.g. Almond and Verba 1963; Linz and Stepan 1996; Inglehart and Welzel 2005) and government performance evaluations (e.g. Przeworski 1991; Clark, Dutt, and Kornberg 1993; Evans and Whitefield 1995)—face three primary challenges that limit their capacity to

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[1] It is important to stress that there remains significant debate in the literature about the causal impact of mass regime preferences on regime outcomes (e.g. Mueller and Seligson 1994; Inglehart and Welzel 2005; Fails and Pierce 2008).

explain both within and between country variance in democratic support in a coherent way. First, existing studies overly focus on the role of causally proximate attitudinal variables, such as "satisfaction with democracy" or interpersonal trust, that are measured concurrently with democratic attitudes. This reliance on other attitudinal variables to explain democratic attitudes does not take us back very far in the causal sequence and thus leads to questions about how such intervening attitudes arise in the first place. Further, such a focus provides little leverage in explaining cross-national, rather than individual, variation in regime preferences.

Second, extant studies demonstrate theoretical and empirical difficulties crossing from the (macro) national level to the (micro) individual level of the analysis implied in the leading theories. While a recent turn toward multilevel modeling has profitably advanced the study of democratic attitudes cross-nationally (e.g. Mattes and Bratton 2007; Huang et al. 2008; Booth and Seligson 2009; Kotzian 2010), such studies remain limited due not only to severe degrees of freedom constraints on the number of macro-level variables that can be included in such analyses, but also because the theoretical logic connecting specific macro level variables and the formation of attitudes at the individual level is mostly absent from statistical tests. For example, the choice of how to define macro level variables such as average levels of democracy or economic growth tends to be arbitrary (e.g., in terms of years included in averages). Further, such variables implicitly assume a constant effect across individuals, even though citizens' experiences with macro level variables vary even within countries, not only by birth cohort, but also by membership in social and political groups that structure the attitudinal formation process.

Finally, this overemphasis on proximate attitudinal explanations and the black boxing of the connection between macro-level variables and individual attitudes underlines the third main challenge, which is that existing cross-national research largely ignores the key temporal

dimension of the attitudinal formation process that occurs during individuals' lifetimes. That is, existing research does not adequately take into account how individuals' past experiences with the macro-political world, rather than just the current "snapshot" of experiences, shape contemporary attitudes.

Theoretically, I agree with the leading perspectives that both values socialization and performance evaluations matter but, building on leading models of political learning, I argue that their effects accumulate over individuals' entire lives. Specifically, I propose a new lifetime learning model that stipulates that democratic commitment is a function of a *weighted average* of individuals' experiences with varying contextual factors over their lifetimes. These contextual factors—which include variables such as government performance, socioeconomic modernization, and regime socialization efforts—shape the degree to which different political contexts provoke more pro-democratic or anti-democratic political learning.

Crucially however, the age at which individuals encounter such varying political contexts and subgroup identifications condition the contextual factors' impact on regime preferences. While the main theoretical perspectives suggest greater weighting of contextual factors experienced during either youth (values perspective) or more recent years (performance perspective), I argue that political learning occurs over the entire lifetime, implying that individuals remain open to the influence of changing political environments both during and after the so-called critical formative years. Since this weighted average framework formally specifies the manner in which different contextual factors at the macro level shape attitudes at the micro level, it has the potential to overcome problems in the existing literature and explain both aggregate and individual level variation, all within a single integrated framework.

Empirical analysis of survey data from Latin America demonstrates the capacity of the lifetime learning model to illuminate the intra- and inter-country differences in democratic commitment in the region and to provide a framework for solving important puzzles about variation in democratic commitment among different social classes and ideological groups in distinct countries. While the model results point to a number of conclusions, the substantively most important include the following: First, modernization theory is strongly supported: the results demonstrate that the level of socioeconomic development experienced during the critical formative years of youth and young adulthood profoundly shapes attitudes over the life course, and this finding appears particularly true among wealthier citizens and leftists. Second, the analysis shows that one of the most consistent results in the literature—the strong positive affect of average levels of democracy in a country during the past 50-100 years—mostly reflects the legacy of past levels of democracy in the country. Only among the poorest citizens is direct experience with democracy over the life course associated with a positive impact on democratic commitment. Third, exposure to mass protest during youth and more recent years is positively associated with commitment to democracy.

Fourth, the analysis suggests that while levels of modernization, regime legacies, and mass mobilization are key for understanding average trends in democratic commitment, departures from these priors can be explained in large part by government performance, which shapes attitudes in both the long term but especially the short term. The two performance variables that matter most are economic performance, in terms of economic growth and inflation, as well as the control of civil violence. Importantly, however, the results show that the effects of governmental performance vary based on the regime under which such performance occurs.

Finally, while the results of the statistical analyses prove complex and raise a plethora of new puzzles for future research, overall the success of the theoretical framework in explaining both individual level and national level variance in democratic support contributes to the literature by reconnecting the analysis of public opinion with macro level outcomes. Further, by pushing the democratic attitudes literature to think more precisely about the theoretical pathways by which macro contextual factors shape individual level attitudes, the weighted average theoretical framework proposed in the paper can serve as a model for other public opinion researchers across a range of subjects.

INTEGRATING VALUES SOCIALIZATION AND PERFORMANCE EVALUATIONS

The differences between the leading *values* and *performance* theoretical perspectives can be reduced to two main dimensions: (1) the factors that shape mass attitudes toward democracy and (2) the periods in the life cycle in which such variables impact individuals' attitudes. On the one hand, the *values perspective* focuses on various cultural agents or structural factors that promote societal norms, broadly conceived. Such sources include long-standing religious and cultural value systems common to particular "civilizations" existing in different parts of the world (e.g. Huntington 1998; Weber 2003 [1958]); social capital, civil society density, and civic culture (e.g. Almond and Verba 1963; Putnam 1993); economic modernization and concomitant attitudinal shifts in favor of self-expression and self-governance (e.g. Lipset 1959b; Diamond 1992; Inglehart and Welzel 2005); socialization effects of living under different regimes (Easton 1965; Easton and Dennis 1969; Linz and Stepan 1996); and international diffusion of norms about democracy and dictatorship (e.g. Huntington 1991; Kopstein and Reilly 2000; Brinks and Coppedge 2006).

In contrast, for the *performance perspective*, the sources of attitudes that reign supreme are the actual outputs of regimes, and in particular, the current regime. What is most relevant is the degree to which a regime delivers on citizens' economic and political expectations (Przeworski 1991; Sarsfield and Echegaray 2005). Regime preferences are thus a function of more instrumental evaluations of the performance of democratic or non-democratic regimes with regard to a variety of economic and political outputs. These outputs include economic performance (e.g. Clark, Dutt, and Kornberg 1993; Mishler and Rose 1997, 2007; Booth and Seligson 2009); control of corruption and enforcement of the rule of law (Chang and Chu 2006; Booth and Seligson 2009; Salinas and Booth 2011); provision of political rights and civil liberties (Evans and Whitefield 1995; Mishler and Rose 1997); protection of citizen security and utilization of violence (Booth and Richard 1996, 2006; Booth and Seligson 2009); and the delivery of political goods more generally.

The second key distinction between the *values* and *performance perspectives* is related to the temporal periods in the life cycle that the theories emphasize (Rose, Mishler, and Haerpfer 1998, 117). Traditionally, many of the theories grouped in the *values perspective* have nodded to the primacy of early socialization experiences and downplayed the possibility of attitudinal change later in life (Mannheim [1928] 1972; Greenstein 1965; Easton and Dennis 1969; Jennings and Niemi 1974, Searing, Wright, and Rabinowitz 1976; Jennings and Niemi 1981; Sears and Funk 1999). In this sense, theories in the *values perspective* match up well with what is known as the *early persistence* political learning model, which highlights the importance of the "critical formative years" of youth and young adulthood.

In contrast, the scholars promoting the *performance perspective* have focused more on evaluations of regimes at the present day or recent past while discounting the importance of

earlier socialization. For proponents of this perspective, the experiences with political contexts that matter most are those occurring during the most recent years in individuals' lifetimes. In this sense, *values perspective* proponents suggest that democratic commitment reflects more "diffuse" support forged through early socialization, while the *performance perspective* points toward the importance of more "specific" support related to current government performance (Easton 1965; Booth and Seligson 2009, 14-16). Thus, while the *early persistence model* associated with *values perspective* theories suggests significant attitudinal stability over the life course, the theoretical expectations of *performance perspective* theories are more closely aligned with what is known as the *lifetime openness* political learning model. This alternative learning model hypothesizes that attitudes are much more susceptible to change over the life course (Sears 1983).

Figure 1 contrasts the key theoretical differences between these two polar political learning models and a third, compromise *lifetime learning* model advanced in more detail below. The first row of subfigures depicts the periods in the lifecycle that individuals are most open to the effects of information from the political environment according to each model; the second row displays the incremental impact of new information on attitudes at each age; and the third row illustrates the degree to which learning during the so-called critical formative years of youth shapes attitudes over the course of the lifecycle.

[Figure 1 about here]

Figure 1: Theoretical Comparison of Competing Political Learning Models
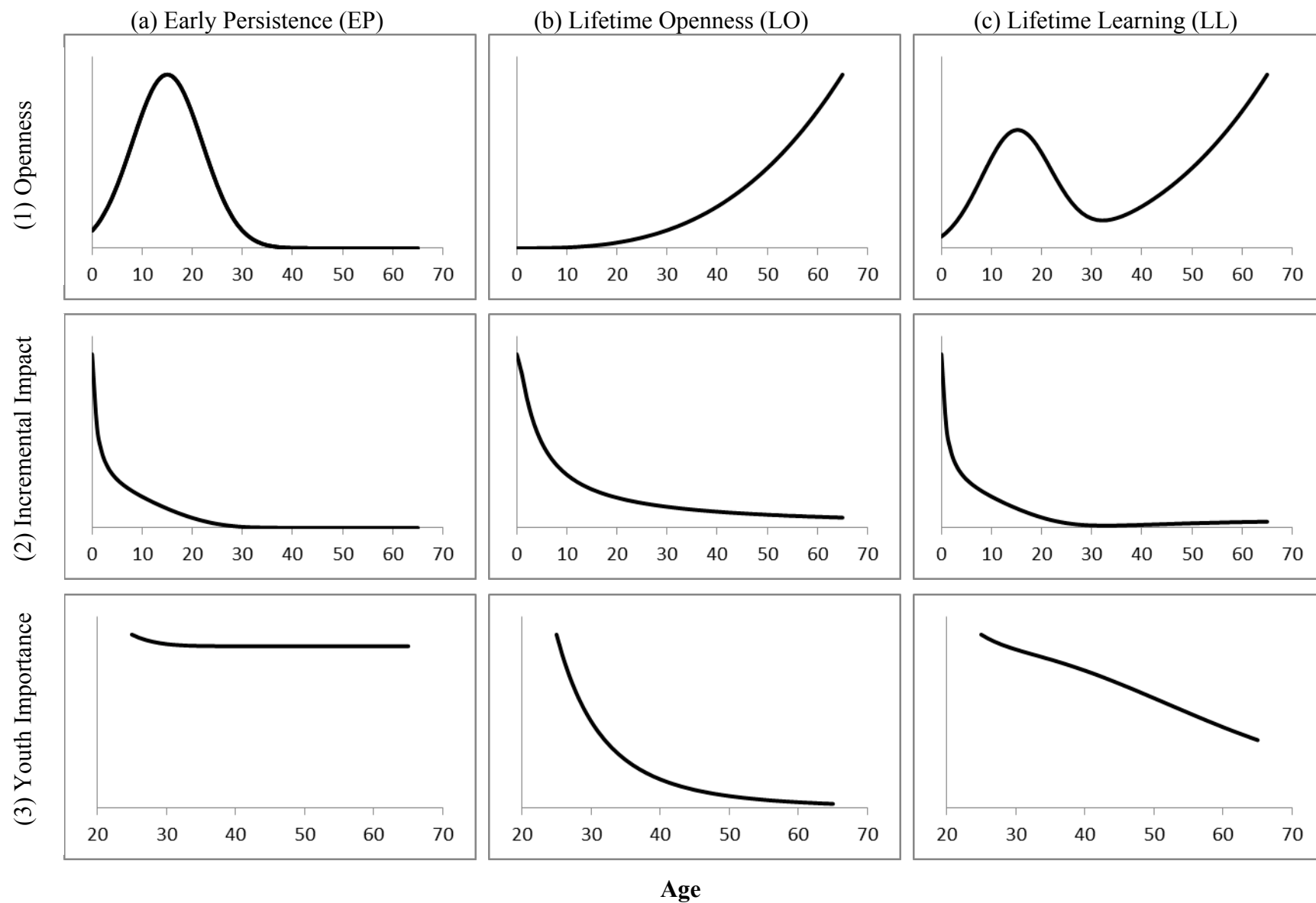
As noted above, for proponents of early socialization theories, the vast majority of learning occurs during the somewhat ambiguously defined "critical formative period" [2] of youth and young adulthood (Panel 1a), while the marginal impact of new information after this period diminishes significantly (Panel 2a) such that political attitudes formed during this period tend to persist and undergo little change throughout the lifecycle (Panel 3a) (Jennings and Niemi 1974; Sears 1983, 94-96). This primacy of early learning and the resistance to change after young adulthood suggests the strong potential for generationally based attitudinal patterns, particularly when the events experienced by different generations are strongly distinctive (Mannheim 1928). In contrast, rather than stipulating that attitudinal persistence increases with age, the *lifetime openness model* suggests that age should be essentially irrelevant to the likelihood of attitudinal formation and change. Attitudes instead have a "uniform potential for change at all ages" such that the marginal impact of new information remains fairly constant over the life course (Panel 2b) and past experience is strongly discounted relative to more recent experience (Panels 1b and 3b) (Sears 1983, 81).

LIFETIME LEARNING MODEL

While the sources of attitudes and the life cycle emphases differ according to these competing perspectives, there are no persuasive theoretical or empirical reasons why commitment to democracy or dictatorship should be shaped only by learned values or performance evaluations, but not both. Ultimately both perspectives imply that the attitudes are

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[2] While many scholars highlight the importance of these "critical formative years," there is little agreement in the literature concerning which years count as especially important (see Delli Carpini 1989, 19-22 for a review).

the "product of experience" with changing political contexts (Rose, Mishler, and Haerpfer 1998, 117). That is, democratic attitudes are likely to reflect a mixture of both more passive socialization of values and active evaluations of performance that accumulate across the entire life cycle. As Rose, Mishler, and Haerpfer (1998) note, regime preferences are likely to be "initially shaped by early socialization and then [evolve] continuously throughout the adult life as initial beliefs are reinforced or challenged by later experience" with the performance of democratic and/or non-democratic regimes (117-118). Values are thus reevaluated based on more "rational" assessments of actual regime performance. Similarly, the actual evaluations of regime efficacy are likely shaped by previously held values gained through earlier socialization experiences. In other words, a process of lifetime learning best explains why individuals form and change their attitudes to democracy.

Consequently, as depicted in Figure 1 column c, a compromise *lifetime learning model* suggests that learning during both the critical formative period and later in life is important for understanding contemporary attitudes. Like the former model, individuals remain substantially open to attitudinal formation in response to the political environment experienced during the critical formative years (Panel 1c). However, like the latter model, the potential incremental impacts of new experiences after the critical formative period remain significant (Panel 2c), and the importance of youth experience is eventually overpowered by the succession of new information from the political environment over the life course (Panel 3c)

An intuitive way to more formally develop such a lifetime learning model is to stipulate that individuals' levels of commitment to democracy is the product of a *weighted average* of the *political contexts* experienced by individuals over their lifetimes (Bartels and Jackman 2013). Political contexts, which we can consider as reflecting all of the social and political events and

changes in a given time period, provide individuals with information about the desirability of different regimes, based on factors identified in the literature as fostering or discouraging support for democracy, such as socioeconomic development, regime performance, and regime-related events such as anti-government protests or guerrilla attacks. However, as suggested by the competing models of political learning, the age at which an individual experiences these political contexts moderates their impact on his or her attitudes, as individuals are more receptive to information during different points in the lifecycle. In other words, the model proposes that an individual's level of democratic commitment at a given period of time reflects a weighted average of past experiences with the political system.

This weighted average political learning framework, which was originally developed to study partisanship in the United States by Bartels and Jackman (2013; Bartels 2001) builds on the traditional age-period-cohort (APC) model, which scholars generally employ to study generationally based attitude change. The innovation of the weighted average framework is that it explicitly models the amorphous cohort differences found in the APC model as a function of the period effects (i.e. political contexts) experienced by birth cohorts over the course of their lifetimes. The stability and/or change of an individual's attitude or attitudes in the aggregate are thus a product of the specific sequence of experiences that the individual or society faces over the course of time. As a result, "generational patterns of political change arise endogenously from the interaction" of changing political contexts and age-related weights (Bartels and Jackman 2013, 8).

More formally, the model is as follows:

$$y_{iT} = \frac{\sum\limits_{C}^{T} w_{t-c} * x_t}{\sum\limits_{C}^{T} w_{t-c}} \qquad (1)$$

where y_{iT} is the democratic commitment at time T of individual i born at time C, the x_t's are the

political contexts experienced by the individual at times t (from birth at time C until attitude

measurement at time T), and the w's are the corresponding weights assigned to the t-Cth time

point (or age) of the individual's life. For simplicity and without loss of generality, we can

assume that the time intervals from C to T are years. Thus, the number of summed terms for each

individual is equal to his/her age.

The relevant sets of theoretical parameters of interest are twofold: (1) a sequence of

political contexts represented by series of parameters x_t occurring over the individual's lifetime

(from year C to year T) that vary in the degree to which they are supportive of pro-democratic

attitudes and (2) a series of T-C age specific weights (the w's) that moderate the impact of the

yearly political contexts over the course of the individual's lifetime. The weights stipulated in

Equation 1 reflect the relative openness of individuals to new information from the political

environment (i.e. political contexts) at a given age or period in the lifecycle. Similar to the

theoretical depiction in row 1 of Figure 1, weights should be relatively large when individuals

are most likely to accept or absorb new information from the political world (e.g., during the

critical formative years or in more recent years), while they should be lowest when individuals

are more likely to resist new information.

Change or persistence of attitudes is dependent not only on these age-related weights, but

also the relative magnitude and direction of the information imparted by the political context

occurring at a given age. Attitude change thus requires either (1) at least a moderately sized

change in the degree to which the political context is supportive of democratic attitudes occurring when an age weight is relatively large or (2) a relatively large change in the political context at points in which w is smaller. In contrast, attitudinal persistence can result from either (1) the lack of contextual change, no matter the corresponding age weights, or (2) relatively low age weights in the presence of significant (although not overly large) change in the political context. Consequently, the extent to which generational differences will emerge depends on the distinctiveness of political contexts experienced by different birth cohorts.

Political contexts impart information to individuals relevant to their regime predispositions; that is, they foster either more pro- or anti-democratic learning. For simplicity, I initially assume that the information imparted by a given political context (i.e., country-year) is equal for all individuals, although such contexts are moderated by the age-related weights described in the previous section. In practice, this means that the experiences that matter for individuals are conceived at the macro, country level. More precisely, democratic commitment is thus a product of different birth cohorts' experiences with changing macro-level contextual factors accumulated over the course of their life cycles.

Further, the factors that shape whether individuals learn more pro- or anti-democratic lessons stem from the existing *values* and *performance* perspectives. For example, from the *values perspective,* modernization theory suggests that the reduction of material and physical insecurity should lead to more pro-democratic values while institutional theories imply that living under a democratic or authoritarian regime will lead to more pro- or anti- democratic learning, respectively. Similarly, performance perspective theories suggest that regime efficacy with regard to economic or political outputs are likely to shape the formation of attitudes toward regimes.

To set ideas more clearly, what this reasoning suggests is that we can model the impact of yearly political contexts (i.e., the x_t's) found in the Equation 1 as a function of the values and performance factors hypothesized to shape regime preferences such that,

$$x_t = \beta_1 * values_t + \beta_2 * performance_t \tag{2}$$

where $\beta_1 * values_t$ and $\beta_2 * performance_t$ represent vectors of contextual variables and corresponding coefficients associated with the values and performance perspectives, respectively. That is, the degree to which a given country year (i.e., political context) is more pro- or anti-democratic is a function of a series of macro level covariates hypothesized to shape the character of different political contexts, with the impact of each macro level variable captured by the corresponding beta coefficients, which are assumed to be constant across time. We can back substitute Equation 2 into Equation 1 to show how the lifetime learning model integrates macro-contextual variables into the political learning process:

$$y_{iT} = \frac{\sum_{C}^{T} w_{t-c} * (\beta_1 * values_t + \beta_2 * perform)}{\sum_{C}^{T} w_{t-c}} \tag{3}$$

In sum, the baseline model stipulated in Equation 3 suggests that an individual's commitment to democracy is a function of a weighted average of a variety of macro-level factors that she has experienced as a member of a given birth cohort over her lifetime. By explicitly integrating the macro-level of analysis with the micro level of analysis, the model thus has the capacity to explain why countries differ on average in their commitment to democracy. While further extensions of this baseline model described below will further help explain within

country variation in democratic commitment, the constant succession of birth cohorts are key to explaining why not only countries, but also individuals, differ in their support for democracy.

EMPIRICAL TESTS

Empirical Strategy

While the weighted average framework stipulates two main sets of parameters—age related weights and those associated with different macro contextual variables—estimation of both are difficult given the lack of availability of long term, cross national data on democratic attitudes in new democracies. Without comparable data spanning at least several decades of time, it is impossible to estimate the weight parameters directly.[3] Consequently, in this article, I primarily test the impact of different macro contextual factors on commitment toward democracy in Latin America by setting the weights by assumption rather than estimating them directly.

More precisely, while the number of potential functional forms of the proper weight distributions is infinite, based on our theoretical priors from the competing political learning models, we can generate a limited set of theoretically informed weight distributions corresponding to the two main learning process: early persistence (EP) weights and lifetime openness (LO) weights. For example, given the importance of the so-called critical formative years according to the EP model, it is plausible that the corresponding weights would be

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[3] With short term repeated cross sectional data, direct estimation of the weights component of the political learning framework is not possible. Intuitively, since we only observe a small snapshot of time it is exceedingly difficult to determine conclusively at what age different cohorts were most likely to change their attitudes toward democracy. From a statistical standpoint, weights estimation requires that there be cohorts included in the analysis that do not overlap in their political context experiences. With longer-term data, there is substantially more statistical leverage (e.g. Bartels and Jackman 2013).

normally distributed with a mean within the age range commonly cited by scholars (i.e., ages 15-25) with a variety of different possible standard deviations. Similarly, theoretically we would expect that lifetime openness weights would be exponentially increasing over the life course such that more recent information is given greater weight over past experience.

Following this logic, I created a set of plausible EP and LO weight distributions and computed weighted averages of each of the macro level variables of interest (described below) for each country-cohort-year corresponding to its experience with each variable over its lifetime.[4] Then, I ran a series of preliminary models explaining democratic commitment based on every combination of the EP and LO weighted average variables. The combination of weights that minimized the unexplained variation in the data was selected for use in the final statistical models reported below. This preliminary analysis suggested that the optimal EP weights should be normally distributed with mean at age 15 and a standard deviation of seven and the optimal LO distribution is $(age+1)^4$. These selected weight distributions were utilized to create the weighted average contextual variables included in the main analysis reported below. More detailed discussion of the weighting procedures and preliminary statistical analyses are available in Appendix B of the supplementary materials.

Data

The survey data for this short-term cross-national analysis comes from the biennial Americas Barometer, conducted by Vanderbilt University's Latin American Public Opinion Project between 2004 and 2012 in 18 Latin American countries. The analysis focuses on one

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[4] As described in more detail in Appendix B, 66 different possible EP distributions were generated, distributed normally with means ranging from 15-25 and standard deviations ranging from 2-7. Ten distinct LO weights were developed ranging from age^2-age^{10} and age^{10}.

main dependent variable, democratic commitment (*Commit*). *Commit* is a 100 point index that is the product of two sub-indices—(1) *Abstract*, which is composed of three items capturing abstract preference for democracy over dictatorship; and (2) *Practice*, which is an index of three items asking whether the respondent would approve of a military/police coup in different crisis situations (i.e., crises of the economy, corruption, crime) (Author forthcoming). Figure 2 plots the average level of democratic commitment across countries over the 2004-2012 period.

[Figure 2 about here]

Control variables at the individual level are restricted to basic demographic items including *Gender*, *Age* and the quadratic of age (*Age_sq*), *Education*, *Household wealth*, as well as a five point measure indicating the respondents' *Approval* of the current president, which will ensure that the weighted average variable estimates are not driven by affinity to the government in power.[5] Finally, all models control for the average level of democracy in each country between 1900 and 1945 (i.e., prior to the birth of all respondents) in order to control for some of the country differences "pre-treatment" of the weighted average variables (*Pre46 Regime*). A

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[5] The theoretical framework and empirical strategy proposed here departs from much of the existing literature in the sense that it reorients the inquiry away from proximate attitudinal predictors of regime preferences and toward more distal contextual sources of democratic attitudes. Within this framework, common independent variables such as satisfaction with democracy, interpersonal trust, and evaluations of the current government's economic performance are variables that mediate the relationship between the more distal impacts of experience with past contexts and contemporary attitudes. Since attitudinal variables measured concurrently with democratic commitment are in this sense mediating variables, it is statistically inappropriate to include them as control variables in the analysis (e.g. King, Keohane, and Verba 1994, 173-175; Gelman and Hill 2007, 188-194). In this sense, the inclusion of presidential approval decreases the size of the coefficients for the weighted average variables.

detailed discussion of the conceptualization and measurement of each of these variables is available in Appendix A of the supplementary materials.

As described above and in more detail in Appendix B, the main explanatory variables for the analysis are the series of weighted average contextual variables that are hypothesized to impact regime attitudinal formation. These variables correspond to theoretical arguments advanced by scholars promoting the competing *values* and *performance perspectives.* Each of the macro contextual variables described below enters the analysis as weighted averages with values unique to each country-cohort-year (see also Appendix A).

VALUES SOCIALIZATION. As a proxy for socialization effects of living under democratic and non-democratic regimes,' I follow the literature by utilizing the level of democracy existing in a given country-year (*Regime*). Specifically, I employ the three point Mainwaring and Perez-Liñan (2013; Mainwaring et. al. 2007) Latin American political regime index. The expectation from the values perspective is that exposure to the education system, the media, and other socializing institutions while living under democratic (authoritarian) regimes will provoke pro-democratic (authoritarian) learning.

Diffusion. To capture the potential effects of the diffusion of norms about democracy and dictatorship across borders, I utilized a variable measuring the year-to-year changes in the level of democracy in the region, excluding the respondent's country (Brinks and Coppedge 2006,

Figure 2: Average Democratic Commitment in Latin America, 2004-2012
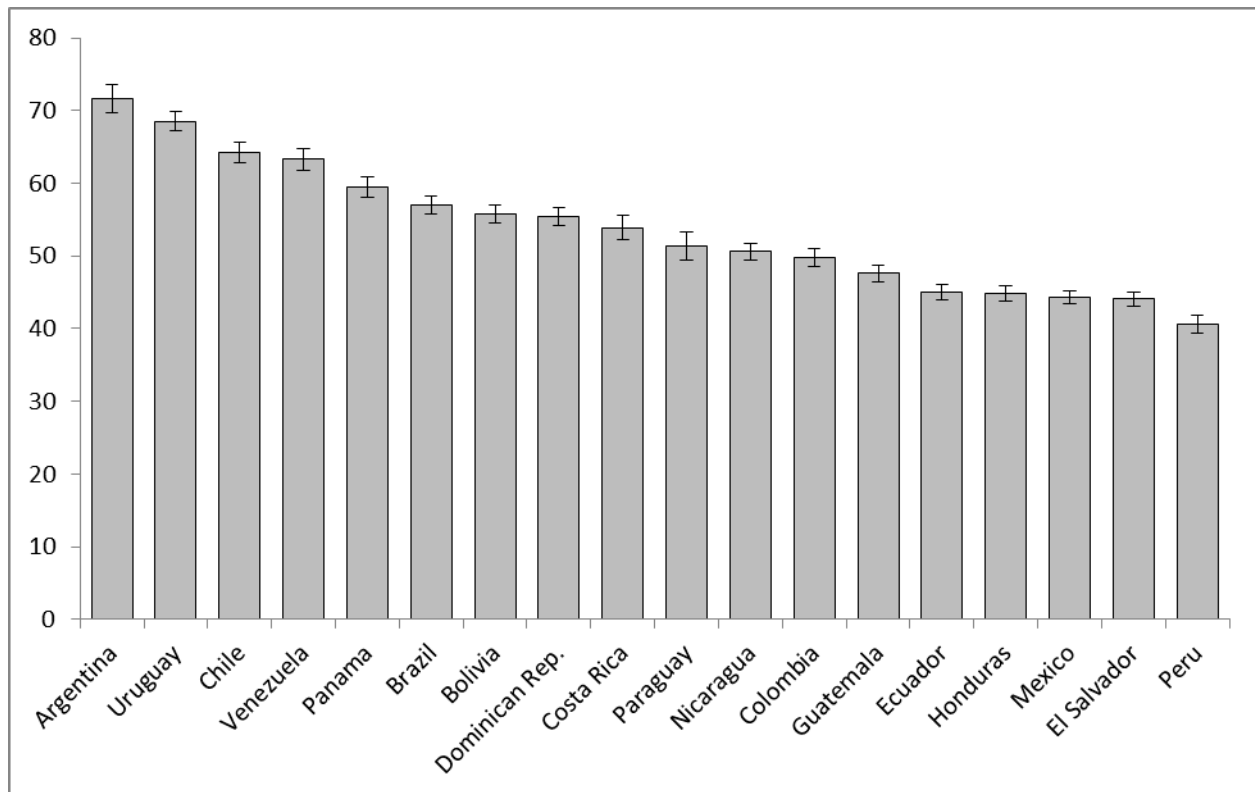
Source: The AmericasBarometer by the Latin American Public Opinion Project (LAPOP), www.LapopSurveys.org and author calculations. The range of years available for each country average varies based on data availability. The figure includes 95% confidence intervals.
The range of years available for each country average varies based on data availability. The figure includes 95% confidence intervals.

Mainwaring and Perez Liñan 2013). For this diffusion variable, the expectation is that pro-democratic (authoritarian) changes among a country's neighbors will produce pro-democratic (authoritarian) learning.

GDPcap. To gauge the impact of modernization, I employ each country's real GDP per capita in each year. The 1946-2008 data comes from Maddison (2010), which I updated to 2012 using data from the IMF.[6] The expectation is that experience with higher levels of economic modernization should be associated with higher commitment to democracy.

Protest. The final variable associated with the values perspective attempts to capture the potentially profound socializing effects associated with the salient political events (Sears and Valentino 1997). Large scale mobilizations and mass engagement with politics—such as those that occur during transitions to democracy—are likely to impart strongly pro-democratic learning, particularly among those engaged in mobilizations against non-democratic regimes (i.e., the *zeitgeist* effect) (O'Donnell and Schmitter, 1986:48; Bermeo 1992; Reisinger, Miller, and Helsi, 1995; Linz and Stepan 1996, 74-76; Bernhard and Karakoç, 2007:542). Thus, exposure to and/or participation in mass protest particularly during the critical formative years should lead to distinctive attitudes in favor of democracy, since such mobilization often imparts lessons about the importance of free speech and association (e.g., Jennings 1987, 2002). To measure mass mobilization, I turn to data on the frequency of non-violent anti-government

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[6] The GDP data is in 1990 US dollars adjusted for purchasing power parity (PPP) using the Geary-Khamis method. The level of socioeconomic development in 1946 in each country has remained strongly correlated with the level of development in more recent years (0.80), suggesting significant continuity in the relative socioeconomic trajectories over time. Given this continuity, *GDPcap* enters the analysis only once, since including multiple weighted versions of the *GDPcap* variable would lead to unstable estimates due to high multicollinearity. However, if both EP and LO weighted *GDPcap* variables are included, only the EP weighted version is significant.

protests and general strikes, as recorded by the Cross-National Time Series Data Archive (Banks 2013).

PERFORMANCE. There are two causal pathways by which governmental performance could impact contemporary commitment to democracy: regime based performance and governmental performance in general. For the former, the expectation is that individuals evaluate the outputs of different regimes, thereby implicitly comparing the performance of democratic regimes to the performance of non-democratic regimes. The latter pathway suggests that government performance, irrespective of the regime, is what matters to everyday citizens.[7]

To measure the latter causal pathway, I generated weighted average variables of each of the performance variables described below, ignoring the regime under which such performance occurred. In contrast to these "pure" measures of governmental performance, the former causal logic suggests that the measures of regime performance need to take into account not only actual performance outcomes, but also the regime under which such performance occurs. To take into account such regime interactions, I generated separate weighted averages for each of the

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[7] According to this perspective, strong governmental performance enhances citizens' perceptions of the capacity of government, generally speaking, to solve pressing challenges. That is, individuals become more trusting in the regimes offered by elites. This expectation is more in keeping with the broad research tradition on political legitimacy or support, which tends to view citizens as evaluating general support for political authorities rather than different regimes (e.g. Easton 1965). This leads to the somewhat counterintuitive alternative hypothesis that strong performance by non-democratic regimes can actually enhance the standing of subsequent democratic regimes over the long run.

performance variables corresponding to performance under democratic and authoritarian regimes.[8]

Growth. The first performance variable—economic growth—is the first of two variables seeking to capture the effect of economic performance. The GROWTH variable is simply the year-to-year percentage change in real GDP/capita variable.

High Inflation. The second economic performance indicator included in the analysis is a variable indicating the occurrence of high levels of inflation during a given year, with the expectation being that citizens will negatively evaluate the regime in power or regimes generally during years of high inflation. I measure high inflation as a binary indicator variable taking on a value of 100 in years in which the year-to-year percent change in the consumer price index recorded by the Montevideo-Oxford Latin American Economic History database exceeds 100 percent.[9]

Conflict. A more direct measure of regime political performance is the capacity of regimes to control particularly violent political conflict, including guerrilla warfare, civil war, assassinations, violent purges, and riots. The expectation is that the delivery of citizen security from such violence should increase support for the regime under which such performance occurs or increase citizen preferences for regimes more generally. The measure of violent conflict is an

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[8] Since some respondents have only lived under democratic rule, I recoded such respondents to the grand mean of the authoritarian performance variables. Since the analyses also include weighted regime types, the models are implicitly controlling for the lack of experience with non-democratic rule among these recoded respondents. Separate variables were also computed for the protest variable in order to test the potential differential impact of protest under different regimes.

[9] I chose to use a binary indicator rather than the absolute inflation rate given the likelihood of diminishing marginal effects at high levels of inflation.

additive index of the number of violent conflict events recorded in the Cross-National Time Series Data Archive (Banks 2013).

Statistical Model and Estimation

With such a complicated data structure, multilevel statistical modeling is appropriate. Multilevel modeling explicitly takes into account the grouping structure of the data, facilitates the inclusion of variables at different levels of analysis, properly takes into account errors at each level of analysis, and yields efficiency improvements by partially pooling estimates across different groups (e.g., Steenbergen and Jones 2002, Gelman and Hill 2007, 6-8). Further, by estimating error components at each level of analysis, the multilevel approach allows researchers to estimate how well the model explains variation at different levels. In this way, the multilevel modeling can demonstrate the degree to which the lifetime learning model explains variance in democratic commitment at the country, subgroup, and individual levels of analysis.

While I leave the formal specification of the model for Appendix C, the baseline model is a standard linear model with multiple error terms corresponding to different levels of analysis (Gelman and Hill 2007, 262-265). The fixed portion of the model includes the individual and country level control variables (including demographics, presidential approval, wealth, ideological group membership, and democratic legacy) as well as country-cohort-year level weighted average variables (i.e., EP and LO weighted average variables). To account for the grouping structure in the data, the model departs from the standard fixed effects model by including additional error terms (i.e., random effects) corresponding to each level of analysis (country, cohort-year, and individual). Models were estimated as mixed effects models using full

maximum likelihood. I followed standard convention in multilevel analyses to center each of the independent variables at their grand means.

Results

Table 1 presents the results from the baseline multilevel models. The controls only model (Model 1) demonstrates that across countries, age and its quadratic, education, presidential approval, pre-1946 democracy levels, and wealth are associated with higher levels of democratic commitment, consistent with prior research. Model 2 includes the weighted average variables including the "pure" performance operationalization, while Model 3 includes separate democratic and authoritarian weighted average performance variables. Model 4 is a trimmed model, which replaces the regime based performance variables from Model 3 with the "pure" performance variables for those variables for which the democratic and authoritarian coefficients do not differ significantly. To help compare the relative importance of each of the variables, the last column of the table reports the impact of a two-standard deviation change in each of the explanatory variables on democratic commitment based on coefficients from Model 4.

<Table 1 about here>

The inclusion of the weighted average variables in Models 2-4 significantly increases the model fits in terms of the AIC and levels of explained variance, and in particular at the country level. Starting first with the variables associated with the *values socialization perspective*, a few findings stand out. First, the most important contextual effect during the critical formative years

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Table 1: Predicting Democratic Commitment in Latin America, Multilevel Models

		M1 (b/se)		M2 (b/se)		M3 (b/se)		M4 (b/se/z)		
Controls	Gender	-3.29**	[0.22]	-3.30**	[0.22]	-3.28**	[0.22]	-3.29**	[0.22]	-3.28
	Age	0.38**	[0.01]	0.52**	[0.02]	0.48**	[0.02]	0.51**	[0.02]	12.94
	Age^2	-0.00**	[0.00]	-0.00**	[0.00]	-0.00**	[0.00]	-0.00*	[0.00]	-1.72
	Education	5.86**	[0.17]	5.87**	[0.17]	5.90**	[0.17]	5.88**	[0.17]	9.11
	Approval	3.27**	[0.12]	3.22**	[0.12]	3.22**	[0.12]	3.22**	[0.12]	6.11
	Wealth	0.90**	[0.07]	0.87**	[0.07]	0.85**	[0.07]	0.86**	[0.07]	3.47
	Pre46 Regime	7.70+	[4.04]	6.31+	[3.48]	6.92+	[3.56]	5.49	[3.68]	5.09
Early Persistence Weighted	Regime			-0.1	[0.44]	0.33	[0.46]	0.25	[0.45]	0.32
	Diffusion			-12.74*	[5.66]	-3.77	[5.97]	-7.32	[5.87]	-0.45
	GDPcap			1.29**	[0.21]	0.79**	[0.24]	1.27**	[0.23]	5.57
	Protest / Protest_dem			2.12**	[0.38]	0.76+	[0.39]	2.24**	[0.38]	3.36
	Protest_auth					0.59+	[0.31]			
	Growth / Growth_dem			-0.53**	[0.20]	-1.13**	[0.21]	-0.81**	[0.17]	-2.59
	Growth_auth					-0.20+	[0.12]	-0.20+	[0.11]	-1.09
	Inflation / Inflation_dem			-4.33*	[2.06]	-6.71**	[1.87]	-5.70*	[2.35]	-1.49
	Inflation_auth					-5.76*	[2.87]			
	Conflict / Conflict_dem			-0.30+	[0.15]	-0.28*	[0.14]	-0.30+	[0.15]	-1.01
	Conflict_auth					-0.21	[0.16]			
Lifetime Openness Weighted	Regime			-5.53**	[1.04]	-3.51**	[1.09]	-3.80**	[1.07]	-3.00
	Diffusion			-40.98**	[10.29]	-42.61**	[10.98]	-45.86**	[10.71]	-2.16
	Protest / Protest_dem			3.08**	[0.52]	2.46**	[0.53]	2.81**	[0.53]	3.68
	Protest_auth					0.58+	[0.32]	0.85**	[0.22]	2.50
	Growth / Growth_dem			1.64**	[0.28]	2.09**	[0.30]	1.94**	[0.29]	4.44
	Growth_auth					0.15	[0.15]	0.34*	[0.14]	2.07
	Inflation / Inflation_dem			-29.01**	[8.16]	-18.19+	[10.14]	-18.61*	[9.04]	-1.22
	Inflation_auth					3.9	[2.90]	-1.65	[1.61]	-0.79
	Conflict / Conflict_dem			-1.05**	[0.23]	-1.03**	[0.23]	-0.95**	[0.23]	-3.86
	Conflict_auth					0.02	[0.21]	-0.08	[0.17]	-0.32
	Constant	52.00**	[1.83]	50.89**	[1.56]	51.10**	[1.56]	50.80**	[1.63]	
Random Effects	sd(Country)	7.91**	[1.30]	6.69**	[1.12]	6.70**	[1.14]	7.00**	[1.19]	
	sd(Cohort-Year)	4.69**	[0.16]	4.24**	[0.17]	4.15**	[0.17]	4.13**	[0.17]	
	sd(Residual)	33.97**	[0.08]	33.97**	[0.08]	33.98**	[0.08]	33.97**	[0.08]	
Summary Statistics	N	97216		97216		97216		97216		
	AIC	964433		964245		964234.2		964216		
	Country R^2	0.35		0.53		0.53		0.49		
	Cohort-Year R^2	0.41		0.51		0.53		0.54		
	Residual R^2	0.03		0.03		0.03		0.03		
	Total R^2	0.06		0.08		0.08		0.08		

+ p<0.10, * p<0.05, ** p<0.01
Coefficients are from mixed effects regressions estimated by maximum likelihood. Standard errors are in parentheses. The last column reports the impact of a two standard deviation change in each of the independent variables in Model 4.

is the level of economic development (*GDPcap*), which provides strong support for modernization theory. Specifically, each $1,000 increase in GDP per capita experienced during the critical formative years is associated with a 1.3-point increase in democratic commitment according to Model 4. Thus, the difference between cohorts growing up one standard deviation below the mean level of development (e.g., late 1980s cohorts in Honduras) are predicted to express democratic commitment eight points lower than those coming of age two standard deviations above the mean of GDP per capita (e.g., late 1980s cohorts in Uruguay).

While there is strong support for modernization theory, there is little support for the impact of regime-based socialization (*Regime*), both domestically and internationally. The lack of substantive or statistical significance for the EP regime variable suggests that after controlling for each country's average level of democracy prior to 1946, growing up under a democratic regime is not associated with higher commitment to democracy. In contrast to the interpretations in much of the literature (e.g. Booth and Seligson 2009; Salinas and Booth 2011), the common association between past average levels of democracy has much more to do with long-term country legacies rather than a regime socialization effect. Further, contrary to expectations but consistent with Salinas and Booth's (2011) findings, more recent experience with higher levels of democracy (LO *Regime*) are actually negatively associated with democratic commitment. That is, living under less democratic regimes in more recent years (e.g. Venezuela, Nicaragua) is associated with higher democratic commitment. This unexpected association perhaps reflects greater demands for democracy among disaffected citizens living under semi-democratic rule.

Similarly, experiencing positive changes in regional levels of democracy (*Diffusion*) during both the critical formative period and more recent years is actually *negatively* related to democratic commitment, consistent with the cruder tests provided by Salinas and Booth (2011).

The finding is suggestive that on average, domestic political reactions to regional trends in democracy trump the positive diffusion of norms about democracy across borders.

However, there is strong support for a socialization effect of experiencing mass *Protest* during critical formative periods and more recent years, and this effect is positive when such protest occurs under both democratic and authoritarian regimes (Model 3). Thus, the high level of mass mobilization experienced by many Chilean cohorts from the 1960s and 1970s during their youth is an additional key reason why such cohorts have tended to be more committed to democracy than lower mobilization cohorts (e.g., 1950s Paraguayan and Salvadoran cohorts).

Turning to the contextual variables associated with the *performance perspective,* the models suggest that government performance is particularly important in more recent years (LO variables), although performance during the critical formative period also evidences strong long-term impacts on democratic commitment. Further, the impact of most of the performance variables is moderated by the type of regime under which such performance occurred, suggesting the citizens are not only evaluating political authorities in general, but also actual differences in regimes.

Economic growth (*Growth*) during more recent years proves particularly important in driving democratic commitment, and while the effect of economic growth is positive when it occurs under both regime types, the effect of such performance is twice as high when it occurs under democratic regimes compared to under authoritarian regimes. The difference between experiencing levels of growth under democratic rule one standard deviation below the mean (~1%) and one standard deviation above the mean (~3%) is associated with a 4.4 point increase in democratic commitment. Similarly, both high levels of *Inflation* and high levels of violent *Conflict* are associated with both long- and short-term negative effects on democratic

commitment. While the long-term negative effects of coming of age during high levels of inflation or violence is consistent across regime types, only under democratic rule in more recent years do such variables produce negative effects on commitment. Thus, for example, a two standard deviation increase in levels of violence under democracy is associated with a nearly four-point decline in democratic commitment, while there is essentially no impact of recent violence under authoritarian rule.

Puzzlingly, however, experiencing higher levels of economic growth during the critical formative years is actually negatively associated with democratic commitment, particularly when such growth happens under democratic regimes. A possible interpretation of this finding is that it reflects a comparison effect. Particularly high levels of growth during the critical formative period could reflect poorly on more middling recent growth. Similarly, the association could reflect Huntington's (1968) argument that political systems in rapidly developing countries have difficulty responding to rising expectations and political demands.

MODEL EXTENSIONS: SUBGROUP VARIATION

Theory

The baseline model makes the simplifying assumption that that the effect of a political context (and contextual variables) occurring in a given year is equal for all citizens. This assumption unrealistically implies that all citizens objectively integrate changes in the political system in the same way, setting aside for a moment the moderating age-weights. In reality, when speaking of the effects of the contextual factors described above, such impacts should be interpreted in terms of *average* effects on the population (or cohort) as a whole (Mannheim 1928; Bartels and Jackman 2013). However, such average effects are likely to obscure

significant variation in the actual lessons learned from the political context by different subgroups in society (Mannheim 1928; Jennings 1987, 2002).

Specifically, the social and political groups in which a person belongs likely moderate his or her experience with the macro context and the subsequent lessons learned about the desirability of democracy or dictatorship. Indeed, there is significant evidence that different subgroups objectively experience and subjectively interpret the same changing macro level contexts and information differently (Mannheim 1928; Delli Carpini 1986; Jennings 1987, 2002; Bartels 2002). In other words, the pro- or anti-democratic lessons imparted by different contextual factors are likely to be quite different depending on the political and/or social groups to which a person belongs. For example, the impact of economic modernization or regime socialization will likely differ based on socioeconomic status (objective experience) and ideological orientations (subjective interpretation), as both identifications are likely to filter the impact of such contextual factors on regime preferences, such that, for example, social class or ideological group membership is associated with varying levels of commitment to democracy in different countries.[10] To reflect this distinction, we can update the baseline model in Equation 3 by indexing the beta coefficients by the relevant political or social subgroup(s) j to which the individual i belongs such that the impact of different political contexts (Equation 4) and specific macro-contextual variables (Equation 5) will vary by subgroup.

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[10] Although social class, ideological orientations, and/or partisan identification are likely to be the most important subgroup level distinctions, in some countries politicized social subgroups (e.g. religious, ethnic, and rural/urban subgroups) might prove more important.

$$y_{ijT} = \frac{\sum\limits_{C}^{T} w_{t-c} * x_{tj}}{\sum\limits_{C}^{T} w_{t-c}} \qquad (4)$$

$$y_{ijT} = \frac{\sum\limits_{C}^{T} w_{t-c} * (\beta_{j1} * values_t + \beta_{j2} * perform_t)}{\sum\limits_{C}^{T} w_{t-c}} \qquad (5)$$

Empirics

To illustrate the potential power of this model extension, I focus on the moderating

effects of two sets of groups—social class and ideological identification—on the impact of

exposure to economic modernization and regime socialization during the critical formative

years.[11] First, while the baseline analysis reported in Table 1 suggests that experiencing higher

levels of economic modernization during youth is one of the most important drivers of future

democratic support, modernization theory has long suggested that the effect of economic

development likely varies across these groups. In this sense, Lipset (1959a, 1959b) suggested in

the foundational texts of modernization theory that the effects of economic modernization should

be most clear among those with higher socioeconomic status. Further, he argued that

modernization should prove particularly influential for leftists, with the expectation that

development would serve to deradicalize the left and make it more accepting of liberal

democratic rule.

Second, an important finding from the baseline model results that contrasts with much of

the existing theoretical and empirical literature on democratic support is that coming of age

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[11] Of course, many other group identifications could also moderate these and other contextual relationships. In the

interest of space, I leave such testing to future research.

under democratic or authoritarian rule does not affect future commitment, and that significant positive findings likely reflect the omission of controls for longer term regime legacies. However, it could be the case that the impact of regime socialization varies across groups such that different socioeconomic or ideological groups could receive the positive (negative) benefits of socialization under democratic (non-democratic) rule.

Within the political context modeling strategy advanced here, the expectation is that individuals with different levels of socioeconomic status and ideological orientations pay attention to different aspects of modernization and political regimes leading to differential learning across subgroups. Since the incidence of these contextual variables varies across countries, the result is that in some countries, for example, those on the left are more committed to democracy than those on the right (e.g., Argentina, Chile) whereas in other countries, those on the right are more committed to democracy than those on the left (e.g., Peru, Guatemala). Similarly, in some countries, there are large "wealth gaps" in democratic support (e.g. Peru and Uruguay) and in others there are no differences across social classes (e.g. Argentina and Bolivia). Figures D1 and D2 in the online supplementary materials illustrate these differences across the region.

To estimate the moderating effects of membership in different social classes and ideological groups, I estimated an additional model in which I include wealth and indicator variables for ideology (left, center, and right, with no ideology as the excluded category) that randomly vary by country and interact each of these variables with the weighted average contextual variables of interest.[12] These fixed interactions indicate the degree to which different

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[12] I also tested the models using wealth indicator variables to avoid imposing linearity in the effect of wealth across countries. These analyses demonstrated that including wealth as a linear variable produced better model fits. In

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socioeconomic and ideological subgroups learned distinct lessons about democracy from early socialization under different socioeconomic and regime contexts.[13]

While the full regression results are available in Appendix D of the supplementary materials, here I graphically examine the subgroup level variation in the long-term effects of modernization and regime socialization. Starting first with the variable effects of economic modernization on different wealth and ideological groups, Figure 3 plots predicted democratic commitment across GDP per capita experienced during the critical formative years among relatively poor and wealthy citizens (Panel A) and ideological groups (Panel B), holding other variables at their mean values. Panel A clearly demonstrates that the positive impact of growing up under higher levels of development is stronger for citizens with higher socioeconomic status. While growing up under low levels of development tends to be associated with no statistically significant wealth gap in democratic commitment (up to approximately $4,500 1990 USD/capita), at high levels of development large differences between the wealthy and the poor emerge (10 points at $10,000). Thus, the effects of modernization redound most clearly to those who have benefited most from it.

[Figure 3 about here]

Similar variation consistent with early modernization theory also emerges among different ideological groups. Panel B of Figure 3 plots the predicted democratic commitment for

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contrast, including ideology as a continuous variable results in worse model fits than a factor based model. Note also that the analysis thus treats membership in different wealth and ideological groups as exogenous to the political contextual variables included in the analysis. This assumption might not hold in practice, but there are no clear strategies to avoid this possible endogeneity issue. This issue does make the subgroup moderation findings more speculative, however.
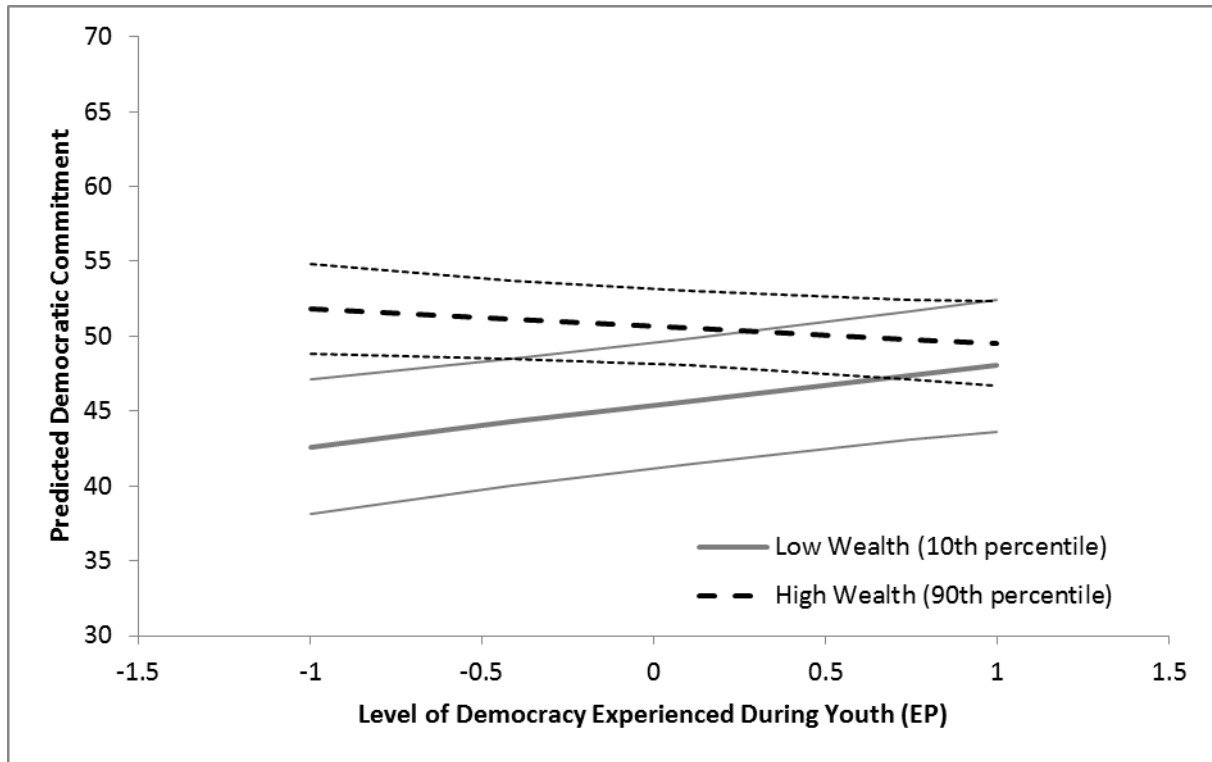
[13] See Appendix C in the online supplementary materials for more details on model specification.

those who identify with the right and with the left.[14] While modernization has a positive effect on commitment for both groups, the impact is substantially higher among leftists. While the difference between the predicted commitment of rightists coming of age under low ($1000) and high ($10,000) levels of development reaches approximately eight points, for leftists the difference is over 15 points, leading to a statistically significant six point gap in democratic support between the two ideological groups at the high end. Thus, while there is no strong evidence that low levels of development engender anti-democratic view among leftists relative to other ideological groups, development does appear to have a greater deradicalization effect on leftists (Lipset 1959b).
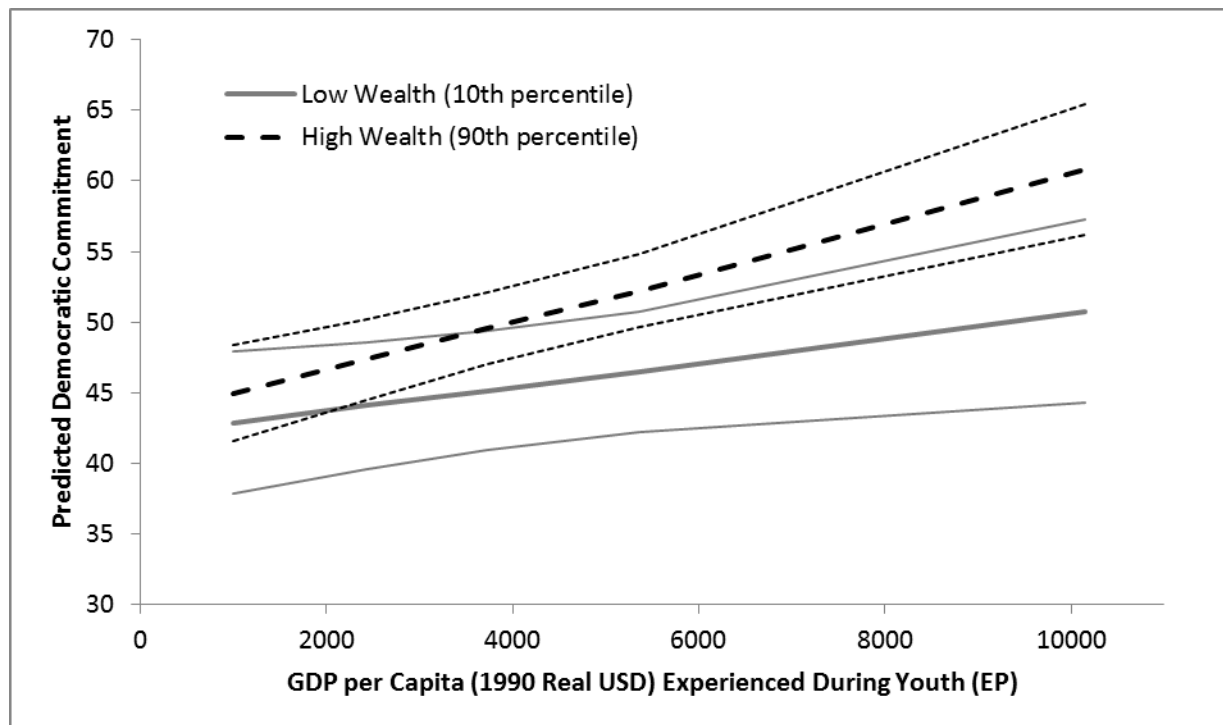
Turning to the subgroup moderation of the impact of growing up under different regime types, while there was no significant difference across ideological groups, a significant interaction with wealth suggests that the null main effect found in Table 1 obscures important variation. Figure 4 plots predicted democratic commitment across the regime type under which citizens came of age for relatively poor and relatively wealthy citizens. While there is a slight, non-significant negative effect of democratic socialization among wealthier citizens, there is a strong positive effect among poor citizens, consistent with theoretical expectations. The model

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[14] The model predictions for centrists and non-ideologues fall between the two polar ideological groups. These two groups are not included in the figure for the sake of clarity.

Figure 3: Moderating Effects of Household Wealth on Impact of Early Regime Experience (a) and Early Modernization Experience (b), Interaction Model Predictions
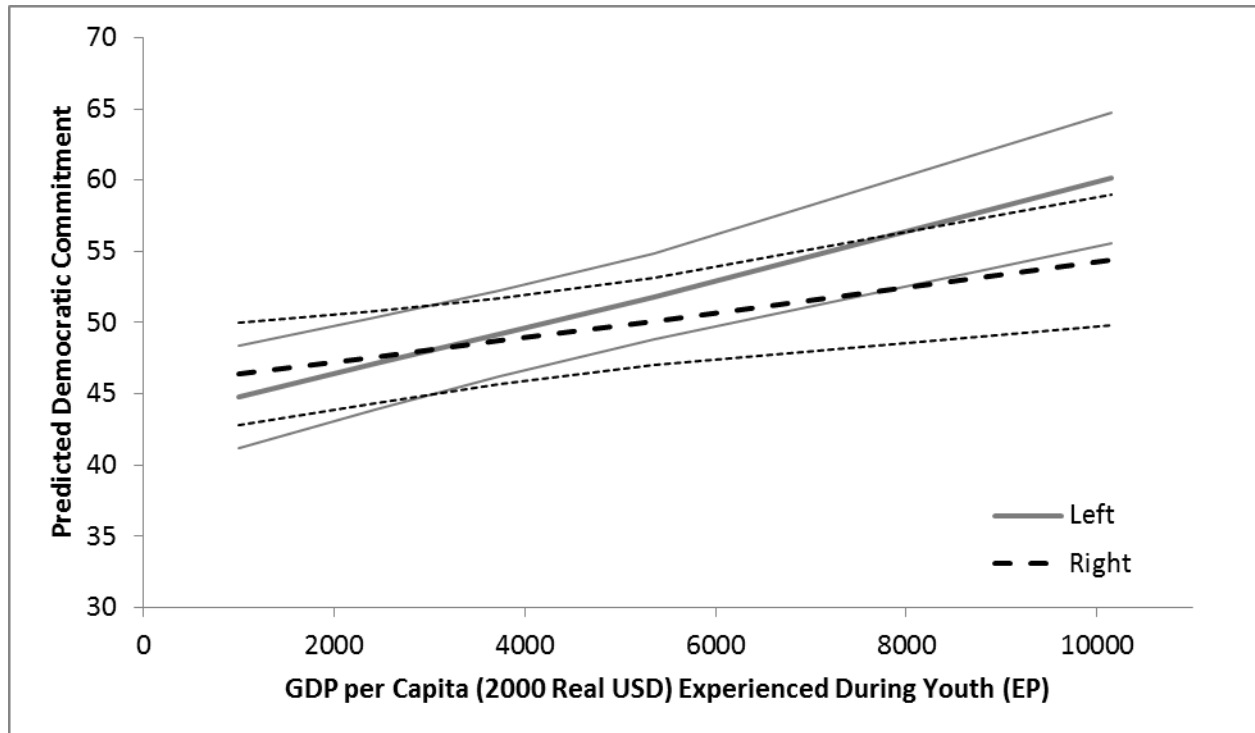

(a)

(b)

Figure 4: Moderating Effect of Ideology on Impact of Early Modernization Experience, Interaction Model Predictions

predicts that poor citizens who grew up under an authoritarian regime are approximately 6 points less likely to support democracy than poor citizens who drew up under democratic rule, who are also not statistically distinguishable in their level of support compared to wealthy citizens. Thus, while the institutionalist argument in favor of the power of regime socialization does not appear to hold broadly, the expected association is clear among poorer citizens.

[Figure 4 about here]

DISCUSSION

While the overall results are complex and difficult to summarize succinctly, it is important to stress that each of the contextual variables included in the model improves our understanding how democratic commitment at the individual, subgroup, and national levels arise and change over time, with most variables affecting attitudes not only during the critical formative years, but also in more recent years. These findings are consistent with the lifetime learning model proposed in this study, which suggests the importance of the accumulated exposure to not only macro sources of values, but also the effects of actual government performance.

Further, of the leading theoretical perspectives, performance and modernization theories clearly outperform theories that center on the role of regimes and international diffusion of norms about democracy. We can draw several other significant conclusions:

- Modernization theory is not only supported on average, but also in terms of its predications about different subgroups in society. In this sense, the effects of modernization are more strongly felt among better off citizens, and the significant variation in support among leftists across the region is highly associated with economic development.

- The long term legacy of democracy (i.e. pre 1945)—or some other unmodeled aspect of each country's political culture that causes both democracy and pro-democratic mass attitudes—better accounts for the common association of higher average levels of democracy with pro-democratic mass attitudes than does actual experience living under democracy or authoritarianism, although a positive effect of growing up under democratic rule might occur among poorer citizens.

- Exposure to mass protest produces both long- and short-term positive effects on democratic commitment, suggesting that more mobilized societies are conducive to democratic consolidation.

- The effect of government performance, including economic growth as well as the control of inflation and civil violence, is dependent on the regime under which such performance occurs, particularly in the short-run, reflecting fairly rational calculations about the value of different regimes.

Put in another way, the overall results from the multilevel models suggest that in years of average government performance, our best guess of the level of democratic commitment in a given country (and average citizens in that country) would reflect the level of modernization, mobilization, and long-term legacies of democracy in the country. To the extent that economic or political performance departs from average levels, we would update our initial expectations to reflect such positive or negative governmental performance. In this sense, the former variables give us a sense of the broad trends in commitment within a given country, while the latter explain departures from these longer-term trends.

While the lifetime learning model and weighted average framework pushes forward the literature's understanding of the contextual determinants of democratic support, in many ways it

provokes more puzzles than it solves. First, a few of the findings are both unexpected and not easily explained. Chief among these is the long-term negative impact of coming of age under *higher* levels of economic growth. This result contrasts with the clearer finding of positive long-term effects of growing up under higher levels of development and the short-term positive association between commitment and economic growth under democratic rule.

Second, the contextual factors examined far from exhaust those researchers have hypothesized to impact democratic attitudes. For example, the analysis did not include variables such as economic inequality, more fine-grained measures of modernization, or social capital. Similarly, focusing on only one region limited the capacity of the analysis to examine cultural theories that explain variation in democratic commitment by traditional religious/cultural values systems. Further, the examination of the moderating effects of subgroup identification only scratched the surface of testing this model extension; not only are other subgroup memberships likely to moderate contextual political learning (e.g., ethnicity, education/political sophistication, religion), but also such variables are likely to moderate the impact of contextual variables beyond economic development and regime experience.

Third, while the analysis demonstrated that for performance variables the regime under which such performance occurs matters, other regime/government attributes are also likely to color citizens' evaluations of different regimes. In this sense, it could be the case that the ideological orientation of the government rather than, or in conjunction with, the regime type matters more than the regime type alone, particularly for citizens with strong ideological priors. That is, it could prove particularly relevant if a prior democratic or non-democratic regime was leftist or rightist.

Finally, while this article provokes many puzzles, it also should help reorient the literature away from analyses that prioritize explaining democratic attitudes by only looking at a cross-section of attitudinal variables and contextual factors. Citizens in new democracies do not simply bring their most recent experiences and evaluations to mind when answering questions about their support for democratic rule; research should more explicitly recognize that such fundamental political attitudes are the result of a lifetime of accumulated experience. In doing so, researchers will have the capacity to reconnect the analysis of individual level regime attitudes to macro-level outcomes, which are the primary motivator of this literature in the first place. For example, since the lifetime learning model and weighted average framework are driven by changing aggregate level factors such as economic growth and levels of political violence, researchers have the capacity to simulate past, present, and future changes in democratic support across and within different countries. Specifically, with these tools, we can make out-of-sample predictions about the evolution of democratic commitment over time in different countries and among different cohorts based on past values and projected future value of the macro contextual variables included in the model, a feat which is not possible with models based primarily on attitudinal variables measured concurrently with democratic commitment. By explicitly modeling the manners in which macro level contextual variables shape attitudes at the micro level, the lifetime learning model can thus give researchers clues about the undoubtedly complex and endogenous relationship between individual attitudes and macro level outcomes.

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Appendix A: Variable Operationalization and Descriptive Statistics

Table A1: Variable Operationalization

	Variables	Operationalization
Individual Level - From LAPOP surveys	Commit	Commit is the product of two sub-indices, Abstract and Practice, each of which is composed of three survey items, rescaled on a 0 to 100 scale with the greatest possible commitment at 100. The questions are the following: **Abstract (alpha=0.42):** (DemPref): Now changing the subject, which of the following statements do you agree with the most: 50= For people like me it doesn't matter whether a government is democratic or nondemocratic, or 100= Democracy is preferable to any other form of government, or 0=Under some circumstances an authoritarian government may be preferable to a democratic one. (DemChurchill): Changing the subject again, democracy may have problems, but it is better than any other form of government. To what extent do you agree or disagree with this statement? [1-7 scale, rescaled to 0 to 100] (DemLeader): There are people who say that we need a strong leader who does not have to be elected by the vote of the people. Others say that although things may not work, electoral democracy, or the popular vote, is always best. What do you think? [Read the options] 0=We need a strong leader who does not have to be elected 100=Electoral democracy is the best **Practice (alpha=0.78):** Now, changing the subject. Some people say that under some circumstances it would be justified for the military/police of this country to take power by a coup d'état (military/police coup). In your opinion would a military/police coup be justified under the following circumstances? [Read the options after each question]: (EconCoup): When there is high unemployment. (CrimeCoup): When there is a lot of crime. (CorruptCoup): When there is a lot of corruption. 0=A military/police take-over of the state would be justified 100=A military take-over of the state would not be justified
	Gender	Male=0, Female=1
	Age	Age in years

	Education	0=Less than primary complete, 1=Primary complete, 2=Secondary Complete, 3=Postsecondary
	Approve	Speaking in general of the current administration, how would you rate the job performance of President NAME CURRENT PRESIDENT? [Read the options] (5) Very good (4) Good (3) Neither good nor bad (fair) (2) Bad (1) Very bad
	Wealth	Additive index based on a series of eight questions about the ownership of various household goods (e.g., television, washing machine, automobile)
	Ideology	Now, to change the subject.... On this card there is a 1-10 scale that goes from left to right. The number one means left and 10 means right. Nowadays, when we speak of political leanings, we talk of those on the left and those on the right. In other words, some people sympathize more with the left and others with the right. According to the meaning that the terms "left" and "right" have for you, and thinking of your own political leanings, where would you place yourself on this scale? Tell me the number. Don't know or No Answer= Non-ideologue 1-4 = Left 5= Center 6-10= Right
Country level control	Pre-1946 Regime	Average level of democracy in each country from 1900-1945 according to the 3-point Mainwaring and Perez-Liñan (2013) regime index
	Regime	Level of democracy in each country-year according to the 3-point Mainwaring and Perez-Liñan (2013) regime index.
	Diffusion	Change in the average level of democracy in the region, excluding respondent's country.
	GDP/Capita	The 1946-2008 data comes from Maddison (2010), which are updated to 2010 using data from the World Bank. The GDP data are in thousands of 1990 US dollars adjusted for purchasing power parity (PPP) using the Geary-Khamis method.
Weighted Variables	Protest	Number of non-violent anti-government protests and general strikes in each country-year recorded in the Cross National Time Series Data Archive (Banks 2011).
	Growth	Year to year change in real GDP/capita, in percent
	High Inflation	1= if year to year change in consumer price index from the Montevideo/Oxford Economic History Database >100 0= if if year to year change in consumer price index from the Montevideo/Oxford Economic History Database <100
	Violence	Additive index of the number of violent conflict events recorded in the Cross National Time Series Data Archive (Banks 2013). The variable adds together Assassinations, Guerrilla Warfare, Purges, Riots, and Revolutions.

Table A2: Descriptive Statistics

Variable	N	Min	Max	Mean	SD
Commit	100756	0.00	100.00	49.30	36.25
Gender	100756	0.00	1.00	0.51	0.50
Age	100756	18.00	66.00	35.91	12.61
Age_sq	100756	324.00	4356.00	1448.79	982.44
Education	99388	0.00	3.00	1.84	0.77
Approval	98552	1.00	5.00	3.23	0.95
Wealth	100756	0.00	9.00	4.13	2.02
Left	100756	0.00	1.00	0.22	0.42
Center	100756	0.00	1.00	0.32	0.47
Right	100756	0.00	1.00	0.28	0.45
No Ideology	100756	0.00	1.00	0.18	0.39
Pre46 Regime	100756	-1.00	0.24	-0.67	0.43
Early Persistence Weighted Variables					
Regime	100756	-1.00	1.00	0.12	0.65
Diffusion	100756	-0.06	0.10	0.02	0.03
GDPcap	100756	0.69	12.76	4.20	2.19
Protest	100756	0.01	3.54	1.22	0.75
Protest_dem	100756	0.00	3.64	1.35	0.75
Protest_auth	100756	0.00	8.00	1.12	1.03
Growth	100756	-3.39	4.60	1.41	1.30
Growth_dem	100756	-5.18	4.98	1.15	1.59
Growth_auth	100756	-8.68	10.60	0.85	2.32
Inflation	100756	0.00	0.69	0.06	0.13
Inflation_dem	100756	0.00	0.94	0.08	0.18
Inflation_auth	100756	0.00	1.00	0.08	0.17
Conflict	100756	0.00	8.76	1.96	1.71
Conflict_dem	100756	0.00	10.05	1.95	1.73
Conflict_auth	100756	0.00	9.00	2.24	1.84
Lifetime Openness Weighted Variables					
Regime	100756	-0.72	1.00	0.58	0.39
Diffusion	100756	-0.07	0.07	0.00	0.02
Protest	100756	0.00	2.69	1.06	0.63
Protest_dem	100756	0.00	2.73	1.06	0.66
Protest_auth	100756	0.00	8.00	1.43	1.27
Growth	100756	-0.87	6.13	2.17	1.16
Growth_dem	100756	0.25	6.13	2.28	1.14
Growth_auth	100756	-5.94	10.60	0.10	2.62
Inflation	100756	0.00	0.28	0.01	0.03

Inflation_dem	100756	0.00	0.27	0.01	0.03
Inflation_auth	100756	0.00	1.00	0.10	0.21
Conflict	100756	0.00	13.61	1.38	2.03
Conflict_dem	100756	0.00	13.61	1.35	2.04
Conflict_auth	100756	0.00	8.26	2.08	1.82

Appendix B: Weighting Procedures and Preliminary Analysis

As described in the main text, the principal explanatory variables in the analysis are a series of weighted average contextual variables. Without long term longitudinal data, it is not possible to accurately estimate the proper distributions of the weights for the weighted average analysis. To partially overcome this identification challenge, a series of theoretically informed weight distributions were generated corresponding to the early persistence (EP) and lifetime openness (LO) political learning models. For the former, it is theoretically plausible that EP weights would be normally distributed with mean in the age range commonly cited by scholars as comprising the so called critical formative years (15-25) with a variety of possible standard deviations (e.g., 2-7), resulting in 66 potential EP weight distributions. On the other hand, since the LO model suggests that more recent years should outweigh the past, it is theoretically plausible that such a distribution would exponentially increase with age. I created 9 such distributions, ranging from $(age+1)^2$ to $(age+1)^{10}$. For all 75 weight distributions, I created weighted averages of all of the contextual variables described in the text. For performance related variables (i.e., protest, growth, high inflation, violence), I created weighted averages that did not take into account the regime under which such performance occurred ("pure performance") as well as separate weighted averages corresponding to performance under authoritarian and competitive regimes, as coded by Mainwaring and Peréz-Liñan (2013).

As an example, consider the level of democracy in the Peruvian case (Figure B1) according to the three point Mainwaring and Peréz-Liñan regime index. Figure B2 plots the regime weighted averages across birth cohorts for the EP and LO weight distributions selected for the main analysis (more below). The EP distribution is normally distributed with mean at age 15 and standard deviation of 7, and results in a weighted average that varies across cohorts based on the regime type in power primarily during each cohorts' teenage years. In contrast, the LO

weighted average $((age+1)^4)$ reflects more closely the higher levels of democracy experienced in Peru in more recent years.

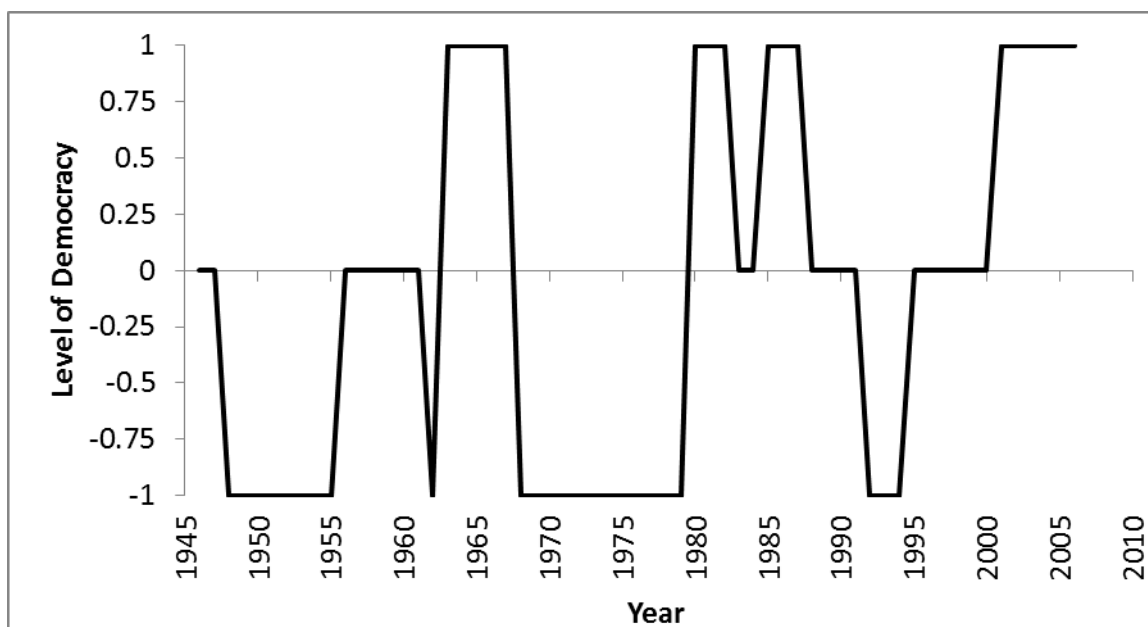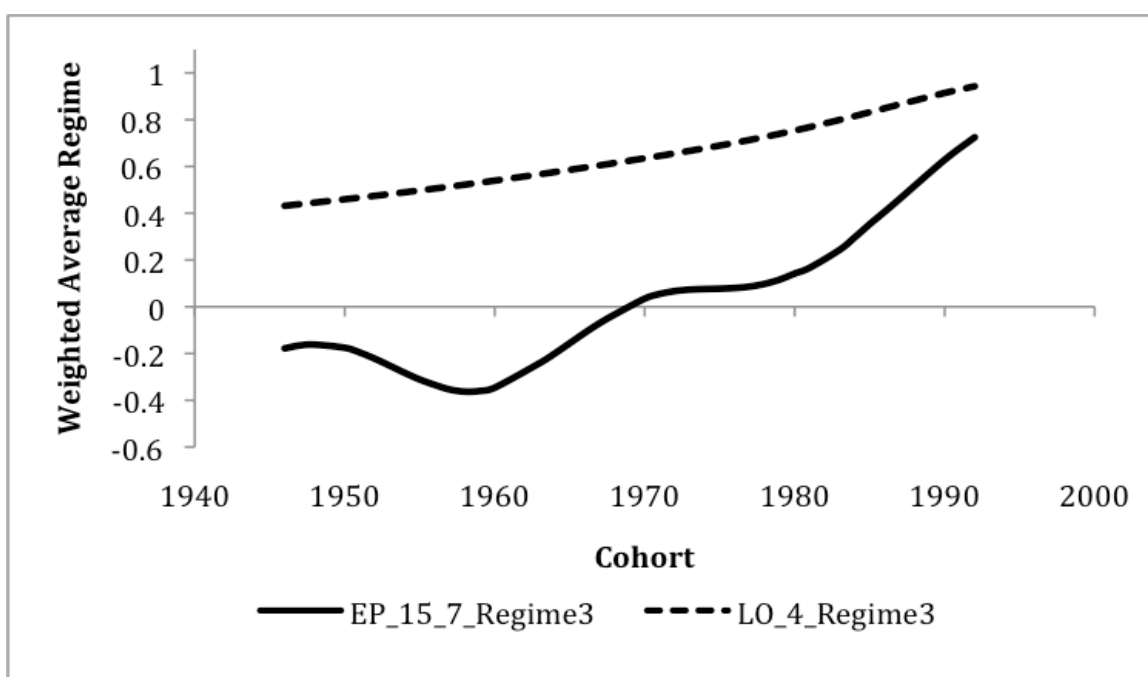**Figure B1: Level of Democracy in Peru, 1946-2010**

Figure B2: Weighted Average Level of Democracy in Peru, by birth cohort
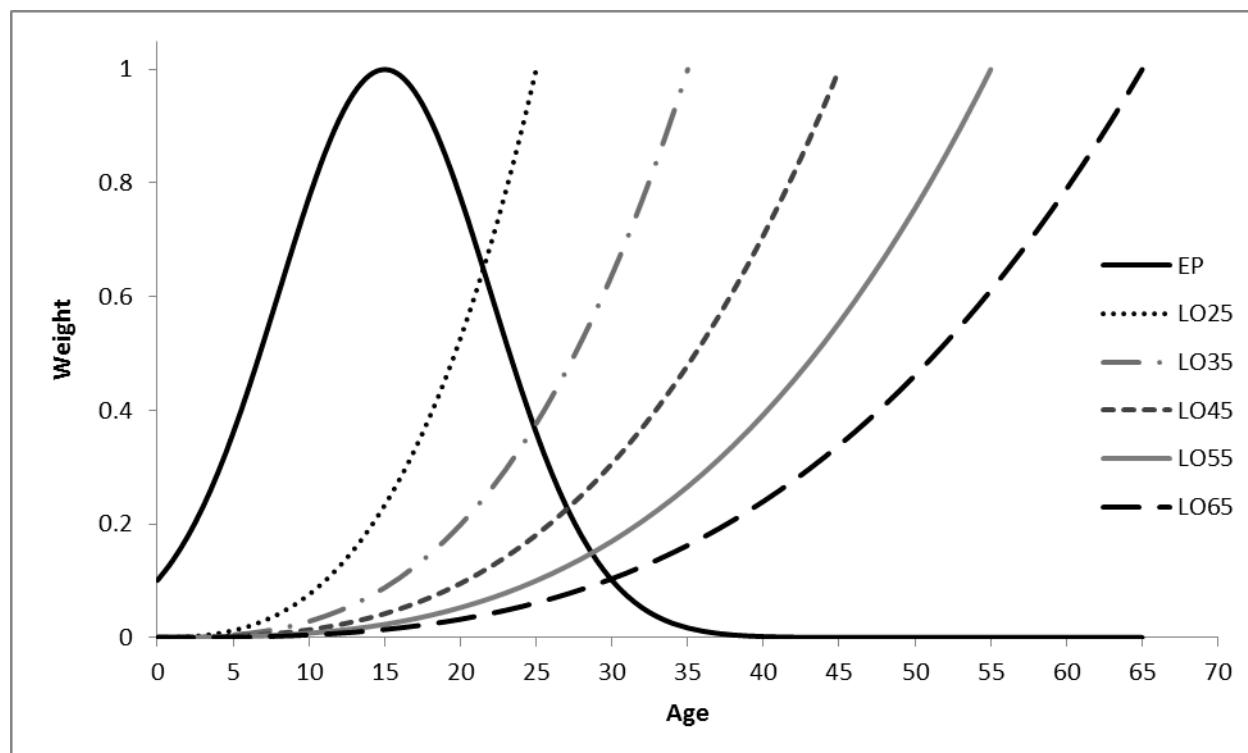
To determine which weight distributions best correspond to the theorized political learning models, models including all combinations of the EP and LO weighted average variables (1220 total, including both pure and regime based performance variables) were run (summary fit results are available on request). The statistical model is the same multilevel model described in Appendix C, but not including any wealth or ideology interactions. Although in theory, the best fit could mean that each contextual variable would have a different EP and LO weight distribution, for simplicity, for each model run all contextual variables had the same EP weighting or LO weighting. The combination of EP and LO weighted average variables that minimized the AIC and caused the greatest reduction in unexplained variation (i.e., multilevel R^2), particularly at the country and cohort-year levels of analysis were selected for the final analysis reported in the main text.

As noted above, and shown in Figure B3, the selected distributions were EP~$N(15, 7)$ and LO=$(age+1)^4$. For the sake of illustration, Figure B3 standardizes each weight distribution such that the EP distribution is equal to 1 at age 15, and the LO distribution is equal to 1 at several different ages (25, 35, 45, 55, 65). The EP and LO weighted averages should be fairly similar for younger respondents, while for older respondents the LO weighted averages should begin to depart significantly as more recent values of the contextual factors outweigh the values experienced during the critical formative years. These distributions imply that approximately two thirds of learning during the critical formative period occurs between the ages of 8 and 22. In contrast, the analysis demonstrated that the best LO distribution is $(age+1)^4$, which suggests, for example, that experiences with political contextual variables during past five years of the life

7

of a 45 year old account for over a third of the weighted average, while nearly two thirds of the

weighted average reflects the last 10 years of the 45 year old's life.

Figure B3: Selected Weight Distributions, LO distributions standardized at different ages

Appendix C: Statistical Model

At the most basic level, we start with a three level model with randomly varying intercepts with fixed independent variables at each level of analysis. The first level of the model is the individual data level, with individuals nested within cohort-years (second level), which are in turn nested within specific countries (third level). We derive the model by specifying equations at each of these levels. At the individual data level, the democratic attitudes of individual *i* in cohort-year *y* in country *c* are a function of an intercept that varies by country-cohort-year, *P* individual level control variables, and an individual level error component. For notational simplicity in this and future equations, I represent these variables and corresponding coefficients as a single vector:

$$y_{iyc} = \alpha_{0yc} + \alpha_{p00} \, controls_{piyc} + \varepsilon_{iyc} \qquad (A.1)$$

The second equation explicitly models the intercept in the individual-level equation such that α_{0yc} is a function of an intercept that varies by country, vectors of beta coefficients and *Q* and R cohort-year explanatory variables associated with the EP and LO weighting schemes, respectively, and a country-cohort-year level error term:

$$\alpha_{0yc} = \beta_{00c} + \beta_{01q0} EP_{qyc} + \beta_{02r0} LO_{ryc} + \delta_{0yc} \qquad (A.2)$$

Finally, the country-level equation models the cohort-year intercept as a function of a fixed constant, the average level of democracy in each country from 1900-1945, and a country-level error term:

$$\beta_{00c} = \gamma_{000} + \gamma_{001} dem_{00c} + \nu_{00c} \tag{A.3}$$

If we make the assumption that the coefficients associated with the explanatory and control variables at each level of the model are fixed (i.e., unmodeled), we can substitute A.3 into A.2 and the resulting equation into A.1 to get:

$$y_{iyc} = \gamma_{000} + \gamma_{001} dem_{00c} + \beta_{01q0} EP_{qyc} + \beta_{02r0} LO_{ryc} +$$

$$\alpha_{p00} controls_{piyc} + \nu_{00c} + \delta_{0yc} + \varepsilon_{iyc} \tag{A.4}$$

Equation A.4 should make clear that the model is essentially a standard linear model including fixed explanatory and control variables at three levels of analysis and two random effects $(\nu_{00c}, \delta_{0yc})$, which we can interpret as additional error terms. Given this interpretation, we are

not interested so much in the actual random effects estimates beyond what they tell us about the residual or unexplained errors at each level of analysis.

The model becomes more complicated as we add in the moderating effects of wealth and identification with different ideological subgroups. To account for such moderating effects the model includes fixed interactions between the continuous measure of wealth and the ideological subgroup dummy variables and each of the EP and LO weighted variables of interest, excluding no ideology (the reference category). Since we are interested in how well the addition of these wealth and ideological group interaction effects help explain differences in the relationships between these variables and democratic commitment across countries, we add two additional random effects. First, since wealth is a continuous variable, it makes sense to allow the impact of wealth to randomly vary across countries (i.e., allow a random slope across countries), which

means that we add an additional country-wealth random effect. Second, to estimate country level differences across ideological groups, we can simply add an additional level to the model between the country and cohort-year levels, thereby allowing the cohort-year constant to vary by ideological group, and the ideological group constant to vary by country. Since we're not adding any additional predictors to this ideological group level (i.e., it is essentially another random intercept), we are again simply adding an additional error term to the model. However, given the number of interactions and random effects in the model, the resulting equation is quite complicated:

$$
\begin{aligned}
y_{iysc} = {} & \gamma_{0000} + \gamma_{0001} dem_{000c} + \beta_{01q00} EP_{qysc} + \beta_{02r00} LO_{rysc} \\
& + \beta_{05q00} wealth_{iysc} EP_{rysc} + \beta_{06r00} wealth_{iysc} LO_{rysc} \\
& + \beta_{07q00} left_{iysc} EP_{rysc} + \beta_{08r00} left_{iysc} LO_{rysc} \\
& + \beta_{09q00} center_{iysc} EP_{rysc} + \beta_{010r00} center_{iysc} LO_{rysc} \\
& + \beta_{011q00} right_{iysc} EP_{rysc} + \beta_{012r00} right_{iysc} LO_{rysc} \\
& + \alpha_{2000} wealth_{iysc} + \alpha_{3000} left_{iysc} + \alpha_{4000} center_{iysc} \\
& + \alpha_{5000} right_{iysc} + \alpha_{p000} controls_{piysc} \\
& + v_{000c} + v_{200c} wealth_{iysc} + \psi_{00sc} + \delta_{0ysc} + \varepsilon_{iysc}
\end{aligned}
\tag{A.6}
$$

The result is a large regression model with four random effects or four additional error terms corresponding to country, wealth, ideological group, and cohort-year random effects (v_{000c}, v_{200c}, ψ_{00sc}, δ_{0ysc}). We stipulate that each of the random effects is distributed

multivariate normal with means of 0 and variances estimated from the data. Finally, since wealth is conceptualized as having a random slope, it is also standard to estimate an additional term that accounts for the covariance between the wealth random effect and the country level intercept.
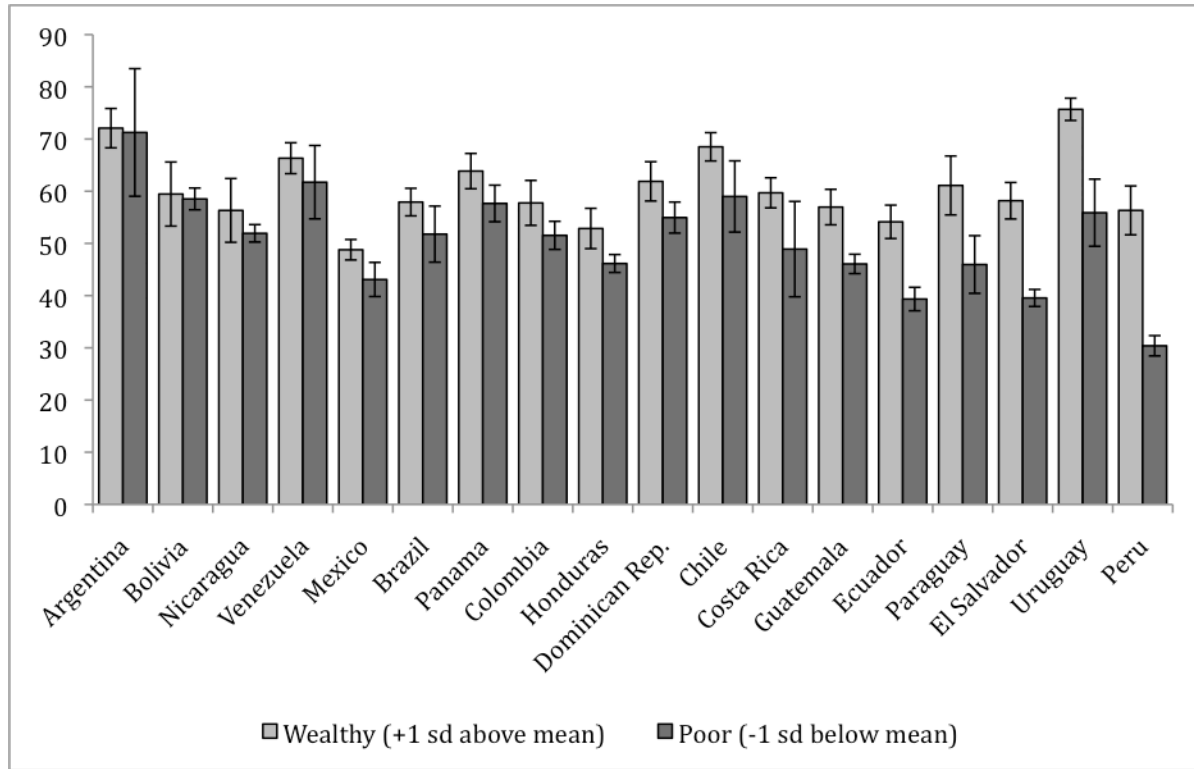
Since each of the random effects has its own variance, it is straightforward to compute R^2's (i.e., the variance explained) for each level and for the model as a whole. First, we compute the null model (i.e., a fully unconditional model), which includes no fixed predictors (except the

constant) and but includes the 4 random effects. After estimating a model with predictors, the

country level R^2, for example, is simply,

$$R_c^2 = 1 - \frac{\sigma_{v000c}^2(new)}{\sigma_{v000c}^2(null)}.$$ (A.7)
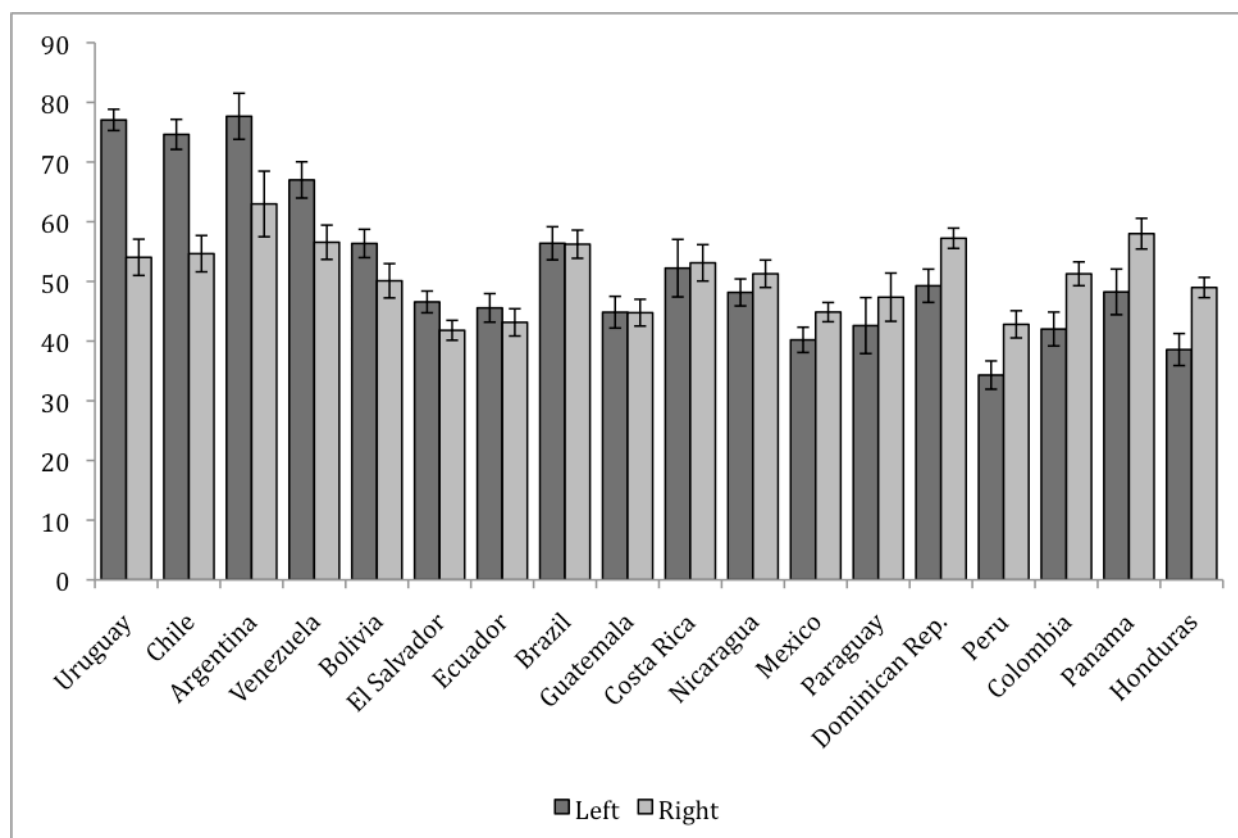
Appendix D: Model Extension Figures and Table

Figure D1: Average Democratic Commitment by Wealth and Country, Ordered by Wealth Gap

Source: The AmericasBarometer by the Latin American Public Opinion Project (LAPOP), www.LapopSurveys.org and author calculations. The range of years available for each country average varies based on data availability. The figure includes 95% confidence intervals.

Figure D2: Average Democratic Commitment by Ideological Group and Country, Ordered by Left-Right Gap

Source: The AmericasBarometer by the Latin American Public Opinion Project (LAPOP), www.LapopSurveys.org and author calculations. The range of years available for each country average varies based on data availability. The figure includes 95% confidence intervals.

Table D1: Predicting Democratic Commitment with Subgroup Interactions

	b	se			
Gender	-3.08**	[0.22]			
Age	0.51**	[0.02]			
Age^2	-0.00**	[0.00]			
Education	5.74**	[0.17]			
Approval	2.89**	[0.12]			
Wealth	0.81**	[0.27]			
Left	1.97	[1.23]			
Center	2.83*	[1.22]			
Right	1.00	[1.23]			
Pre46 Regime	7.34**	[2.31]			
Regime	0.68	[0.68]			
Diffusion	-8.29	[5.30]			
GDPcap	1.32**	[0.33]			
Protest	1.86**	[0.33]			
Growth_dem	-0.96**	[0.15]			
Growth_auth	-0.20+	[0.10]			
Inflation	-6.66**	[1.81]			
Conflict	-0.28*	[0.14]			
Regime	-3.80**	[0.93]	***Random Effects***		
Diffusion	-39.09**	[9.55]	sd(Wealth)	1.15**	[0.21]
Protest_dem	2.35**	[0.47]	sd(Country)	5.43**	[1.08]
Protest_auth	0.88**	[0.18]	corr(Wealth-Country)	-0.92**	[0.31]
Growth_dem	1.95**	[0.26]	sd(Ideology)	3.54**	[0.40]
Growth_auth	0.30*	[0.13]	sd(Cohort-Year)	5.40**	[0.19]
Inflation	-22.36**	[7.67]	sd(Residual)	33.59**	[0.08]
Conflict_dem	-1.06**	[0.20]			
Conflict_auth	0.09	[0.16]			
WealthXRegime_EP	-0.64**	[0.12]	***Summary Statistics***		
WealthXGDPcap_EP	0.14*	[0.07]	N		97216
LeftXRegime_EP	-0.99	[0.81]	AIC		964970
CenterXRegime_EP	-0.25	[0.76]	Country R^2		0.63
RightXRegime_EP	-0.12	[0.78]	Wealth R^2		0.73
LeftXGDPcap_EP	0.36	[0.38]	Ideology R^2		0.43
CenterXGDPcap_EP	-0.23	[0.37]	Cohort-Year R^2		0.39
RightXGDPcap_EP	-0.44	[0.38]	Residual Indv. R^2		0.02
Constant	48.20**	[1.54]	Total R^2		0.08

+ p<0.10, * p<0.05, ** p<0.01
Coefficients are from mixed effects regressions estimated by maximum likelihood.
Standard errors are in parentheses.