Can Lipset's theory travel through time and space? the destination Nicaragua, 1972-1998. A time series test of the social requisites of democracy.

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29 June 2011

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A Time Series Test of the Social Requisites of Democracy

INTRODUCTION

> "Men have argued that only in a wealthy society in which relatively few citizens
> live in real poverty could a situation exist in which the mass of the population
> could intelligently participate in politics and could develop the self-restraint
> necessary to avoid succumbing to the appeals of irresponsible demagogues".[1]
> -- Juan Lipset

The epigraph is emblematic of an orthodox theoretical view that 'only in a wealthy society could a situation exist in which the mass of the population could intelligently participate in politics' and that this relationship is universal and applicable cross time and space. Comparing ancient Greece to modern societies, arguments are made that wealthy societies prerequisite mass participating in politics as well as an avoidance of irresponsible demagogues. The development of self-restraint through wealth emerges as a universal constant through time and space. However, how universalistic is *Social Requisites of Democracy* cross time and space? Can we imagine or theorize the genesis of the democratic self-restraint in alternative sources?

The following research design is an attempt to apply the well-known theory of Lipset's *Social Requisites of Democracy* to the Central American context, and more specifically, to the Nicaraguan case. In recent years, scholars (such as e.g. Linz and Stepan, Przeworksi, Karl and Schmitter) have attempted to apply existing theories to previously unexamined areas of the world (most relevant to this paper is the application of South European and Latin American transitions and consolidations to the new democracies of Eastern Europe). But what is their goal? In order to gain a new insight of how applicable an existing theory is cross-nationally, Or to show that we

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[1] Lipset, 1959, p. 75.

cannot apply theories to multiple regions?   The latter might indicate that there is specificity and uniqueness to a region or a theory.

Lipset's work can be seen asoundational to the modernization theory. Empirics shows at most correlation for a strong empirical between economic development and democratic politics. Lipset states that wealth constitutes the ultimate cause of democracy, which is brought about by changes in society, such as growth of the middle class, industrialization, urbanization and an increasing level of education.

Bearing in mind that Lipset looks at multiple cases, it should be noted that this research project emphasizes a single country analysis over time. Another challenge of applying theories to different settings is the timing of events. Lipset's theory was explored in the late 1950's, and it would be very challenging to look to what degree his theory could be applied almost fifty years later. This will be the analysis of my paper.

The following research will deal explicitly with one of Lipset's hypotheses that 'a more economic development leads to a more democratic outcome'. Lipset tested his theory cross-nationally among forty-eight countries, and found a strong relationship between economic development and a degree of ("more" versus "less") democratic outcome. This theory is reflected in other relations (can be seen in the realm of the discussion of the relationship between) democracy and various conditions, such as religion, economy and behavioral attitudes.

More specifically, this research design deals with an application of Lipset's theory to the case of Nicaragua, and can therefore be seen as an attempt to apply an existing theory to a longitudinal case study. Potential methodological problems of making inferences should be kept in mind, and will be elaborated throughout the paper.

This research project will be structured as follows. It will start off with a detailed analysis of Lipset's *Social Requisites of Democracy*. This includes a careful analysis of which exact hypothesis will be tested throughout this paper. Secondly, I will follow with a theoretical

discussion on the applicability of Lipset's theory. In other words, what kind of theoretical predictions and conclusions can be drawn from Lipset's theory, and to what extent can his theory be applied to a different theoretical and empirical framework? Thirdly, as this project deals with a possible application to the Nicaraguan case, I will ask how well Lipset's theory can actually travel through time and space that is how it fares with respect to one specific country in the Central American region. The indicators of wealth, education, urbanization and violence will be tested in the Nicaraguan setting. Finally, this paper presents an evaluation of Lipset's application to the Nicaraguan case with the more general questions: What do we learn from transferring existing theories into different theoretical and empirical settings? What needs to be taken into account in order to accomplish an adequate testing of an existing theory?

PART ONE: LIPSET'S THEORY

The Theory

Lipset's *Social Requisites for Democracy* stands as the foundation of modernization theory. His overall argument states that there exists a strong empirical relationship between economic development and democratic politics. Lipset's causation stresses social conditions that 'serve to *support* a democratic political system, such as education'.[2]

For Lipset, wealth constitutes the ultimate cause of democracy. Wealth induces changes in the society, such as growth of the middle class, industrialization, and an increasing level of education, which make mass participation and democracy possible. Furthermore, Lipset adds that 'the stability of a given democratic system depends not only on the systems' efficiency in modernization, but also upon *effectiveness and legitimacy* of the political system'.[3] Lipset refers to

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[2] It is important to stress here that Lipset's theory looks at the possible emergence of democracy, in comparison to Przeworski, who looks at the likelihood of maintaining a democratic country.
[3] Lipset, 1959, p. 86.

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Weber who argues that 'modern democracy in its clearest forms can only occur under the unique conditions of capitalist industrialization'.[4]

The theory that will be tested throughout the paper is then an increase in wealth, level of education and urbanization will bring about a higher level of democratic outcome.[5]

The Measurement

Lipset conducted this comparative research at the aggregate level with an emphasis on the socioeconomic characteristics of societies as causal factors of democratization. We find here a clear shift from individual to system characteristics. Economic development is measured through wealth, industrialization, urbanization and education. Lipset argues that countries that experience a higher degree of wealth, industrialization, urbanization and education, are also more democratic than countries that experience a lower degree of economic development.[6] Lipset researched all together forty-eight countries, and divided them into four categories: (1) stable democracies, (2) unstable democracies and dictatorships, (3) democracies and unstable dictatorships, and (4) stable dictatorships. A further distinction is given that the first and second category is applied to the European and English-speaking Nations, and the other two categories are applied to the Latin American Nations. Nicaragua was one of the Latin American countries examined by Lipset. Because Lipset considered his theory to be applicable to the Nicaraguan context, this paper seeks to illustrate the underlying causal mechanisms at play.

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[4] Lipset, 1959, p. 73.

[5] Further work could examine this hypothesis further, by looking at wealth as a predictor of education across time. Is it in fact true that increased wealth corrolates with higher levels of eduction? A first cut at the Nicaraguan case suggests otherwise.

[6] The economic indicators are measured as follows by Lipset:

Economic Indicator	Measurement used by Lipset
Wealth	Per capita income; number per persons per motor vehicle and per physician; number of radios, telephones, and newspapers per thousand persons.
Urbanization	Per Cent in Cities over 20,000; Per Cent in Cities over 100,000; Per Cent in Metropolitan Areas.
Education	Percentage Literate; (1) Primary, (2) Post-Primary, and (3) Higher Education Enrolled per thousand persons.
Industrialization	Percentage of Males in Agriculture; Per Capita Energy consumed.

PART TWO: A THEORETICAL DISCUSSION OF LIPSET

Having briefly explored Lipset's theory, the question now arises of how can we actually apply his theory to a different framework? Since Lipset used a cross-national test across forty-eight countries at time 't1' (1959), the challenge is how we can test his theory adequately theoretically and empirically. The test that will be suggested in this paper is not a cross-national analysis, but rather a single-case longitudinal study of Nicaragua over twenty-six years[7]. Furthermore, it can also be said that it does not affect the theory, since we can still observe the relationship between economic development and level of democracy in a single country over time. Furthermore, looking at a single country study over time will provide us with a more accurate understanding of the causal linkage between economic development and democracy.[8] When looking at a single time period, possible unique time factors for that specific year are not taking into account.

A further advantage of looking at a single country over time is that some variables are held constant that could have an effect on the level of democracy, such as culture, geography, historical background and religion. Since Lipset examined a cross-national country study, he did not control for these variables. The purpose of bringing these independent variables into the argument is to show possible theoretical weaknesses of Lipset's theory, as well as possible improvements.[9]

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[7] The time range is from 1972 to 1998. The is no exact theoretical reason of why this data starts exactly in 1972. However, it is essential that the time range includes different periods of dictatorships/ democracy, such as the Somoza period, the Sandinista period, and the developed democracy since 1990. During the process of choosing the time line, one essential mark was the equal time distribution for each of this three regime types.

[8] Establishing causation in empirical work is notoriously difficult. It is especially challanging when time is not taken into acount because corrolation might be spurious. Looking at the independent and dependent variables in their natural time sequence, as suggested in this study, is one of the most reliable statistical ways of establishing causation.

[9] The actual empirical testing of the independent variables of *culture, ideology and religion* will be made at a later point in time. The main goal of this research project is solely to test Lipset's theory.

It is significant to note, however, that these variables can have an effect on the level of democracy. For example, Huntington argues that religious tradition has been a significant factor in transformations to democracy. He states that there 'has been negative relationship between democracy and Catholicism, Orthodox Christianity, Islam and Confucianism; conversely Protestantism and democracy have been positively interlinked'.[10] It is argued here that Protestant countries are more likely to give rise to democratic regimes than Catholic ones.[11]

Another important variable is culture. As mentioned before, a single-case longitudinal study controls for the variable *culture.* Studies in the past have shown that culture, such as having been a former British colony, affects the likelihood of being democratic. It is argued that countries that were former British colonies have a greater likelihood of becoming democratic than non-British colonies. '[M]any British colonies, such as those in North America before the revolution or India and Nigeria in more recent times, had elections, parties, and the rule of law before they became independent'.[12] Therefore, democratization was more successful and gradual in the ex-British colonies. Furthermore, on the variable *culture*, Huntington argues that cultural factors appear more democratic than economic ones.[13] Also, according to Almond and Verba, a *civic culture* and a *modern personality* according to Lerner, have been identified as essential of a participant democratic society.[14]

Having analyzed the weaknesses of Lipset's theory, a good empirical test will guard against falling into the same pitfalls. Because this research project tests a single case, it is vital to have variation on the dependent variable. Out of Lipset's categorization of his forty-eight countries, we would not take a country into account that never experienced an

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[10] Lipset, 1994, p. 5.
[11] Lipset, 1981, p. 57-58.
[12] Smith, 1978, p. 13.
[13] For further reference see: Huntington, 1993, 298-311.
[14] These alternative independent variables will not be tested throughout this paper. They indicate possible alternative explanations, and a possible future research extension.

autocracy/dictatorship. Furthermore, it is important that we find a shift towards more democratic politics.

Here, the Nicaraguan case provides us with an excellent foundation to test Lipset's theory. During the 1970s and 1980s we find less democratic politics than in the 1990s. Furthermore, we find a strong variation of wealth (as indicated by Lipset through GDP per capita). As a possible weakness of the modernization theory it can be questioned whether there is a systematic relationship between economic development and democratic performance, and whether it holds for different time points? In a single country analysis I will research whether this relationship holds over time.

'Ideology' and 'Revolution'

Furthermore, other possible variables, such as 'revolution' and 'ideology' are omitted from Lipset's analysis. Especially, in the Nicaraguan case, it can be argued that they could have had an influential impact on the democratic outcome. In the time period between 1972 and 1998, Nicaragua experienced a strong ideological shift from the Somoza regime, a right-wing authoritarian one, towards the Sandinista regime, an ideological leftist regime, and closely related to Soviet Communism. A question that could be raised here, is to which extend is the type of regime/ ideology related to the level of democracy? What do we learn, for example, if we have economic growth, but no increase in the democratic outcome? Can we reject the modernization hypothesis, or is there something about ideology that shifts the analysis to a different theoretical setting?

In addition, how would Lipset deal with the variable *revolution?* [15] He does not include *revolution/ violence* into his analysis. The theoretical discussion states that a violent situation makes a country less democratic than a non-violent situation. Through a longitudinal study, in

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[15] Lipset conducted his research in 1959. Nicaragua did not experience a revolution in this year.

which we find a revolutionary period vis-à-vis non-revolutionary, we would expect to find an impact on the democratic politics.

The Uniqueness of Third-World Countries in the Bi-polar world.

Another key point to raise in the Nicaraguan context, is the bi-polar struggle between the US and the Soviet Union. Lipset argues that there is some inconsistency in the relationship between economic welfare and democracy, and the struggle in the bi-polar world can be seen as one of them. However, does the fact that Nicaragua was often a battleground between the two superpowers enter into Lipset's argument? Di Palma argues that 'the diffusion of democracy to some Less Developed Countries in recent years happens largely due to the end of a bi-polar world – Third world dictators can no longer take advantage of the tension between the Soviet Union and the West'.[16] This would have an impact of the democracy on developing country, in this setting to Nicaraguan case.

PART THREE: APPLICATION TO THE NICARAGUAN CASE

Before starting off with a narrower specification of why Nicaragua was chosen in this context, a more methodological question will be raised: can we apply a cross-national analysis to a single case? We should distinguish here between the processes of theory-building and theory-testing. In the case of theory-building, applying a single case would be very questionable in terms of its generalizability. The fact that we gain a greater insight into a single-case should not be underestimated, however, for the process of theory-testing it would not bring us theoretically beyond the 'case border'. However, this particular research project deals with theory-testing. Since Lipset includes the single case of Nicaragua in his analysis, it is helpful to ask if his theory holds for a single country over time.

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[16] Di Palma, 1988, p. 15-21.

Nicaragua[17]

Lipset includes the case of Nicaragua in his analysis. Nicaragua, under the Somoza regime, was classified in 1959 as a stable dictatorship. Nicaragua is used in this application of Lipset's theory in an attempt to show whether his theory also holds within a single country over time. Specifically, Nicaragua is chosen because there we find a strong shift towards democracy over the last three decades. It is therefore interesting to ask whether we also find a shift of economic development related to the move towards democracy. If we follow Lipset's argument, we find a strong relationship between economic development and degree of democracy. As a reminder, Lipset argues that economic development serves as a requisite for democracy. Therefore, we would expect that experiencing economic development also increased the democratic outcome.

The phenomenon of the economic development under the Somoza regime

Starting with the time period of 1972, it has to be mentioned here that one of the strongest economic growth spurts in Nicaragua occurred under the Somoza regime in which we find paradoxically a much lesser degree of democracy than in later time periods. It is argued that during the Somoza dynasty the strongest modernization period occurred, in which Nicaragua experienced an important and relevant period of development in the nations infrastructure and production system. Agriculture and fishing were the main national exports. During this period Nicaragua was considered one of the richest and most prominent countries in Central America.[18]

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[17] Nicaragua is considered a third-world nation on the international economic scale. It has today about 5 million inhabitants, mostly in the age of 1-29 (71%). It has to be mentioned that Nicaragua is still recovering from an earthquake 1972, a civil war 1978 – 1979, and a devastating hurricane.

[18] Exporting $ 566.5 million a year, the economy experienced an economic strength in comparison to the other Central American countries. 'According to Somoza, Nicaragua was "the barn of Central America". With this message he was implying that Nicaraguans had hope in the future. But it was not completely true, because he was only enriching the rich, bourgeois and himself. Exploitation was the main instrument of production. Laws were made to protect the owners of the land and of the farmers' (Espinosa, 2001, 12).

Starting the measurement in 1972 until 1998, leaves us with the notion that we start off already with a very (relative) high level of GDP/ capita. It is therefore hard to argue whether we expect to find economic development following 1972.[19]

The measurement of how democratic Nicaragua was in a given year will be operationalized mainly through the Freedom House Score[20]. Economic indicators will be measured through continuous statistical data of the GDP per capita (Cordobas) starting from 1972 to 1998. Furthermore, since Nicaragua experienced an ongoing period of violence, a variable of violence[21] is included in the analysis. Each given year is measured either as 'violent' (1) or as 'non-violent' (2). Included in this category is the Sandinista revolutionary period (1978-79), as well as the Contras (1982-88). Furthermore, this test looks at the level of education over time. Illiteracy rate is used as a measurement of education, arguing that the combined percentage of urban and rural illiteracy reflects the education level of this particular year. Another indicator for whether a country is expected to be democratic, is urbanization.

The model of the test of Lipset's theory includes the following indicators:

$$[\text{Level of Democracy in Nicaragua} = \beta(\text{Constant}) + b (\text{Econ}) + b (\text{Violence}) + b (\text{Education}) + b (\text{Urbanization}) + c]$$

[Graph 2.1.] Here

As a first overview of the relationship between the Freedom House Score and the wealth indicator (GDP/ capita), we find almost no relationship. Observing the results in a very preliminary stage

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[19] Furthermore, Nicaragua experienced a very dramatic earthquake in 1972. It had an effect on the national economy, the urbanization/ population and education system. It is crucial to mention here that this might have a possible impact on the theoretical and methodological accuracy of this analysis.

[20] The Freedom House Score is measured from '1' to '7'. '1' being very democratic, and '7' being very undemocratic. The Freedom House Score provides 2 different results: the democratic indicator for civil liberty and for political liberty. In this context, the average is used. This research is aware of major disadvantages of using Freedom House Score. It can be argued that the Freedom House Score indicates no aggregate effect of the level of democracy, or change over time. Another advantage of the Freedom House Score is that it is seen as too static. Annual estimates of the 'openness of a country' are measured, but dynamic changes over time are left out. However, as a democratic indicator, it serves the purpose of this research project. Here, democracy is not being seen as a probabilistic value, but rather within a relationship of being more vis-à-vis less democratic. In the realm of an extension of this research project, other measurements of democracy will be used.

(graph 2.1.), we do not find a relationship between GDP/ capita and the Freedom House Score. As the GDP increases over time, we actually find an increase of an 'undemocratic outcome' (the rating for Freedom House increases). However, it has to be mentioned here that in the year of 1972, Nicaragua experienced a relatively high level of GDP/ capita, and therefore it is very hard to expect an increase in the GDP/capita. The following statistical Time-Series Analysis will give us a more precise picture of the whole model.

In order to run an adequate test, a Prais-Winston AR (1) Time-Series regression was run. Among the different independent variables, we find a variation in order to obtain an adequate measurement.[22] The following table shows no significant results for the longitudinal study of Nicaragua of twenty-six years for GDP/ capita, violence, and urbanization. However, a statistical significant result was found of the level of education, measured through illiteracy rate. The result shows that an increase in the GDP/ capita brings about an increase in the rating of Freedom House Score, which implies that an increase in literacy rate has a statistically significant effect on a more democratic outcome in Nicaragua.

Table 2.1. Prais-Winston AR (1) iterated estimates regression[23]

Source	SS	df	MS				
					Number of obs.	=	26
					F(4, 21)	=	11.76
Model	10.5094402	4	2.62736005		Prob > F=		0.0000
Residual	4.69253657	21	.223454122		R-squared	=	0.6913
					Adj R-squared	=	0.6325
Total	15.2019768	25	.608079071		Root MSE	=	.47271

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[21] The variable violence is coded as either '1' for violence, and '0' for non-violence.

[22] The variation is distributed as follows: FH: 2.5 – 6.5; GDP: 4337 – 11039.2; Violence: 0 –1, Education: (Illiteracy rate) 42.5 % to 35.7 %; and Urbanization (%): 47 – 63.7.

[23] Number of obs = 27
F (3, 23) = 1.51
Prob > F = 0.2373
R-squared = 0.1650
Adj R-squared = 0.0561
Root MSE = 0.61509

FHS	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Gdp	-.0000557	.0001545	-0.36	0.722	-.00378	.0002667
Violence	.4657375	.2943094	1.129	0.129	-.1481811	1.1079656
Illiteracy	.6469284	.3011929	2.15	0.044	.0186511	1.275206
Urbaniz	.1314485	.1418462	0.93	0.365	-.1644376	.4273346
_cons	-28.39357	19.53881	-1.45	0.162	-69.15082	12.36367
rho	.1707489					

Durbin-Watson statistic (original)   1.619830
Durbin-Watson statistic (transformed) 1.866760

The strong relationship between illiteracy and democratic outcome, can best be explained in the realm of Lipset through the following table:

Lower level of illiteracy $\Rightarrow$ Higher average level of education $\Rightarrow$ More potential Newspaper readership
$\Rightarrow$ More potential school enrollment
$\Rightarrow$ Emerging middle class
$\Rightarrow$ Higher Level of Democracy

Lipset argues that *literacy* brings as an initial possible consequence $\rightarrow$ democracy, and additional consequences of democracy are among others mass society, open class system, and literacy. Therefore, it can be argued that we have to be careful about the directional flow of the argument. Is it literacy that brings about democracy, or is it democracy that brings about literacy? In the Nicaraguan context, it could be argued as well that an increase of the Freedom House Score over time leads to an increase of literacy. Looking at the timeline of 't1' versus 't2' might be a possible indicator of measuring the directional flow.

Having briefly analyzed the statistical significance of the Time Series Analysis, a brief remark will be made about the statistical findings for the independent variables of GDP/ capita, urbanization, and violence. Although, urbanization and violence do not show statistical significance, they still indicate a positive relationship with the Freedom House Score. Especially, the independent variable 'violence' shows a strong relationship, meaning an increase in violence brings about an increase in the Freedom House Score (more despotic). Lipset does not include 'violence' into his analysis.

PART THREE: A THEORETICAL EVALUATION

> 'Nicaragua and her culture are part of the shared
> history of Latin America and its relationships with
> successive imperial powers. The terms colonialism,
> neo-colonialism and dependency are unavoidable
> when dealing with Nicaraguan realities, despite
> their jaded and stereotypical connotations'.[24]

Having stated that only 'illiteracy' indicates statistical significance with the Freedom House Score, the question then raises of how do we explain the findings. The following part deals with a critical and theoretical evaluation of the statistical findings, as well as possible alternative variables that also might cause/ have an impact on the level of democracy in Nicaragua.

One of the major indicators that if left out by Lipset, is foreign involvement. The variable *foreign intervention* is not yet integrated into this research project and will be researched at a later point in time, since the main goal of this research project is to test Lipset's theory. Especially in the Nicaraguan case, we find a strong US presence that might have an impact on the level of democracy. It could be argued that the existing US foreign aid under the Somoza regime and the drastic foreign aid cut under the Sandinista regime affected the relationship between GDP and democratic outcome. If we expect to find a strong relationship between US involvement and an increase of democratic outcome, then we also have to look at measurement of the FHS itself. For measuring the democratic outcome in Nicaragua between 1972 and 1998, the Freedom House Score has been used. However, it can be assumed that we find an anti-communist bias within the Freedom House measurement. On the continuum between (1) democratic and (7) undemocratic, the communist period under Sandinistas was rated more despotic than the period under the Somoza regime. Therefore, it can be argued that any US involvement would increase the democratic outcome, because it would shift away from a communist regime.

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[24] Quintanilla.

Explaining the democratic outcome through education and its implication

The table shows a strong relationship between education and democratic outcome. In the realm of Nicaragua's 21st century, it experiences many important changes, such as 'the incorporation of the army to civil life, high rates of unemployment, health epidemics, and starvation'.[25] Education can be seen within this negative situation. We find a very high rate of illiteracy, which is a reflection of Nicaragua's poverty and level of education. Having in mind that seventy-one percent of the population is under thirty years old, education would be the best starting point for gaining a more democratic outcome.

As Lipset, Lerner also finds urbanization and education as essential factors for the process of democratic development. However, he includes another variable of *media growth (communication)* in the model that is unconsidered by Lipset. Lerner considers urbanization 'to be a stimulating factor, which in turn accelerates media growth and eventually democratic development'.[26] It could be argued here that looking at media growth in Nicaragua could be an indicator of democracy. However, as measured within this analysis, urbanization does not show statistical significance with the democratic outcome. A possible extension would be here to measure the actual media growth (number of communication devises, such as radio, TV and telephone) in Nicaragua over time, in order to test Lerner's theory. The media growth shows a possible alternative way of how we can measure urbanization in a more media oriented way, and from here it would be interesting to see whether it has an impact on the level of democracy.

Another possible theoretical explanation of why Nicaragua does not follow Lipset's theory that an increase in wealth (GDP/ capita) brings about an increase in democratic outcome, is Arat's explanation. According to Arat, who revisited the modernization theory, Nicaragua falls into the category of curvilinear (polynomial) positive-negative relationship. It covers the countries 'which display an increase in the level of democracy with increasing levels of economic

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[25] Espinosa, 2001, p. 1.

development until a certain level of economic development is reached and no relationship after that economic development level'.[27] In the Nicaraguan context, it can be argued here that since at the starting point of this analysis, in 1972, Nicaragua experienced a very high GDP/ capita, and therefore it reached his 'certain' level of economic development. According to Arat, a theoretical explanation could be drawn that since the level of economic development is been reached in the early 1970's in Nicaragua, we do not find an increase in economic development, and therefore no relationship between an increase of the GDP/ capita and an increase in democratic outcome. Furthermore Arat argues that only a few countries fit the model suggested by the modernization theory.[28]

Conclusion:

Having presented a few alternative explanations, the last part deals with a possible further research extension. The future research goal involves two main aspects, first a more in-depth analysis of the role of education in Nicaragua's explanation for democratic outcome. The second one is an expanding of the country analysis in Central America. It can be seen as an attempt to solve the possible problem of small N data, and a possible uniqueness of the Nicaraguan case. The more in-depth analysis of the role of education can be seen as a crucial factor for gaining a more democratic outcome. As mentioned during my statistical analysis, education (measured through Illiteracy rate) has a high relationship with democratic outcome. Here, an interesting research extension would be: How the improvement of the level of education would result in a more

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[26] Arat, 1988, p. 22.

[27] Arat, 1988, p. 28. If we were to include the evolutionary thesis, 'most of "developing countries" should appear in the positive-linear category, and most of the "developed" countries should appear in the No-relationship category.

[28] 'Out of 120 countries only eight experience increasing level of democracy with increasing levels of economic development, and the developed with the rest of the developing countries are spread in the other categories, each of which suggests a different pattern of relationship.

democratic outcome. Certain strategies, such as the role of the state, as well as obstacles[29] would be researched.

It is always a challenge to apply an existing theory to different regions and different time periods than was originally intended. This paper applied Lipset's theory to the Central American region of Nicaragua over a time span of twenty-six years. Whether this application was successful can only partially be answered through a purely statistical measurement. In the realm of statistical significance, it can be said that education shows a very strong relationship to democratic outcome. In the purely Nicaraguan setting between 1972 and 1998, we found that wealth, as Lipset presented, to be the main predicator of democratic outcome, to have no relationship in the Nicaraguan context.

Coming back to the initial question, whether *Lipset's theory travels through time and space, it can be answered that i*n the setting of the Nicaraguan, we find only a very limited application of Lipset's theory. Although no single case can prove or disprove a theory, the Nicaraguan case is at least very suggestive that economic growth is not a universal constant in democratic politics.

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[29] According to the Minister of Education, Fernando Robleto, the following are some of the major obstacles that hindered the process of increasing the level of education: 1. Insufficient training of the main partakers involved in the process, 2. A weakened control system. 3. Insufficient communication and diffusion of the process by means of a massive information campaign, 4. A precise model of school autonomy was neither well established nor well documented. (Espinosa, 2001, p. 24).

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APPENDIX

Table A.1. "Year, GDP/ capita, Freedom House Score, Violence, Illiteracy Rate and Urbanization for Nicaragua"

Year	GDP/ capita[30]	FHS[31]	Violence[32]	Illiteracy rate[33]	US involvement	Urban[34] (%)
1972	9363	3.5	0	42.5	1	47
1973	9645.3	4.5	0	42.4	1	47
1974	10662.2	4.5	0	42.3	1	47
1975	10305.6	4.5	0	42.2	1	50.3
1976	10509.5	5	0	42.1	1	50.3
1977	11039.2	5	0	42	1	50.3
1978	9861.4	5	1	41.9	1	50.3
1979	7027.5	5	1	41.8	1	50.3
1980	7125.8	5	0	41.5	1	53.4
1981	7282.1	5.5	0	41.2	1	53.4
1982	7005.4	5.5	1	40.9	1	53.4
1983	7108.1	5.5	1	40.6	1	53.4
1984	6786.3	5	1	40.3	1	55.8
1985	6313.5	5	1	40.2	1	56.4
1986	6104.3	5.5	1	39.8	1	57
1987	5920.6	5	1	39.4	1	57.6

[30] Central Bank of Nicaragua. Economic Studies Department. GDP per capita (millions of 1980 Cordobas).

[31] Freedom House Score: from the Freedom House Indicator. Rating (7) as very undemocratic and (1) very democratic. The values are the mean of civil and political liberties.

[32] The Violence variable is coded as a dummy variable: meaning (1) violence, and (2) non-violence. The Year between of 1978 and 1979 are coded as violent, in which the Nicaraguan Revolution occurred. Furthermore, the years of 1982 until 1988 are also coded as violent, in which the *Contras* occurred. The dates were taken from the BBC News Time Line from March 11, 2003, (http://news.bbc.co.uk/2/hi/americas/1225283.stm).

[33] Illiteracy Rate is being used as an predictor of education. The measured shows the percentage of the total population of combined urban and rural areas. (Statistical Abstract of Latin America, Vol. 38, p.252).

[34] Percentage of Urban Population: from World Development Indicators, World Bank 2002. The World Indicator did not provided information for the following years: 1973, 1974, 1976, 1977, 1978, 1979, 1981 and 1982. In the cases of 1973 and 1974, the information were taken from the year 1972. In the cases 1977, 1978 and 1979, the information were taken from the year 1975. In the cases 1981 and 1982, the information were taken from the year 1980. Since we do not expect to find a drastic change of percentage of the urban population from one year to the next, it might be argued that it is adequate to use for example in 1973, data from 1972. However, a major endogenous factor that has an influence on the percentage of urban population in Nicaragua are Hurricanes due to the high amount of number of death. Nicaragua experienced two major Hurricanes, the 'Great Hurricane' in 1780 (killed 22.000 people) and 'Hurricane Mitch' in 1998. Hurricane Mitch was the worst natural disaster in Nicaragua's history. An estimated 3,000 people died or are still missing. 870,000 people - 18% of the total population - were affected by the storm. According to USAID, the Nicaraguan government estimated that nationwide more than 30,000 houses had been either totally or partially destroyed and as many as 870,000 people were estimated to have been displaced. (USAID report on Nicaragua) Therefore, it can be argued that the Hurricane has an effect on the percentage of Urban population, but not on the years, of missing data.

| 1988	5063.3	4.5	1	39.1	1	58.2
1989	4859.9	5	0	38.6	1	58.8
1990	4744.7	3	0	38.7	1	59.4
1991	4599	3	0	38.4	0	59.9
1992	4483.5	3.5	0	38.1	0	60.5
1993	4337	4.5	0	37.8	0	61
1994	4352.5	4.5	0	37.5	0	61.6
1995	4409.2	4	0	37.2	0	62.1
1996	4495.7	3	0	36.7	0	62.6
1997	4598.4	3	0	36.2	0	63.1
1998	4656.9	2.5	0	35.7	0	63.7

Table A.3. "Prais-Winsten AR (1) Regression of Freedom House Score and GDP"

Source |	SS	df	MS		
Model |	1.47323825	1	1.47323825		
Residual |	8.90808916	26	.342618814		
Total |	10.3813274	27	.384493608		

Number of Obs = 28
F(1, 26) = 4.30
Prob > F = 0.0482
R-squared = 0.1419
Adj R-squared = 0.1089
Root MSE = .58534

c3 |	Coef.	Std. Err.	T	P>|t|	[95%	Conf. Interval]
c2 |	.0001158	.0001309	0.88	0.385	-.0001532	.0003848
cons |	3.390585	.9742765	3.48	0.002	1.387931	5.393239
rho |	.7523027					

Durbin-Watson statistic (original)	0.522217
Durbin-Watson statistic (transformed)	1.897826

Graph 2.1. "Scatterplotts of FHS/ GDP"[35]

Nicaragua 1972 - 1999

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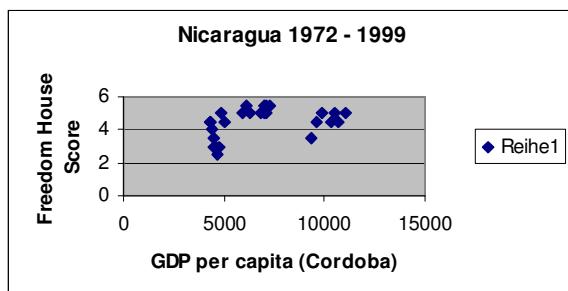
[35] The distribution is a result from table A1.