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Abstract
Elections in majoritarian states are supposed to produce single-party majority governments. However, the most recent elections in the three main advanced industrial majoritarian parliamentary democracies - the United Kingdom, Canada, and Australia - failed to produce majority governments. No single party won a majority of the parliamentary seats in any of these three elections, a condition commonly referred to as a hung parliament. Despite the literature's tendency to dismiss hung parliaments as electoral abnormalities, this recent wave of hung parliaments among such similarly situated states suggests the presence of an underlying causal factor that contributes to these outcomes. The current study analyzes the role played by the rise of postmaterialist values in advanced industrial societies in the occurrence of hung parliaments through multiple least squares regression. While the study is not able to arrive at a universal explanation for hung parliaments in all three cases, it is able to explain hung parliaments in Australia and Canada.

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WHAT'S THE HANG UP?: EXPLORING THE EFFECT OF POSTMATERIALISM ON HUNG PARLIAMENTS

Jennifer Biess

Abstract: *Elections in majoritarian states are supposed to produce single-party majority governments. However, the most recent elections in the three main advanced industrial majoritarian parliamentary democracies – the United Kingdom, Canada, and Australia – failed to produce majority governments. No single party won a majority of the parliamentary seats in any of these three elections, a condition commonly referred to as a hung parliament. Despite the literature's tendency to dismiss hung parliaments as electoral abnormalities, this recent wave of hung parliaments among such similarly situated states suggests the presence of an underlying causal factor that contributes to these outcomes. The current study analyzes the role played by the rise of postmaterialist values in advanced industrial societies in the occurrence of hung parliaments through multiple least squares regression. While the study is not able to arrive at a universal explanation for hung parliaments in all three cases, it is able to explain hung parliaments in Australia and Canada.*

INTRODUCTION

Elections in majoritarian states are designed to produce single-party majority governments. However, the most recent elections in the three main advanced industrial majoritarian parliamentary democracies – the United Kingdom, Canada, and Australia – failed to produce majority governments. No single party won a majority of the parliamentary seats in any of these three elections, a condition commonly referred to as a hung parliament. Despite the literature's tendency to dismiss hung parliaments as electoral abnormalities, the recent wave of hung parliaments among such institutionally similar states suggests the presence of an underlying causal factor that contributes to these outcomes.[1] This study seeks to analyze the role played by the rise of postmaterialist values in the occurrence of hung parliaments in advanced industrial societies.

After the UK's 2010 general election, its hung parliament sparked a national conversation over electoral reform. However, there is widespread disagreement over which system is best.[2] If the UK and other countries seek to ameliorate their "hung parliament problems" and want to enact electoral reform, it is imperative to first understand what causes hung parliaments. Armed with that information, these countries can make educated decisions about more appropriate electoral systems. While this discussion is limited to three specific countries, the general lessons can be extended to other advanced industrial states, especially those with majoritarian electoral systems.

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[1] Kalitowski 2008.
[2] Wheeler 2010.

LITERATURE REVIEW

The Westminster Model

The UK, Australia and Canada are all built on the Westminster model of parliamentary democracy, also referred to as the majoritarian or plurality model. Westminster model democracies generally have two-party systems. Proponents of this structure emphasize the ability of the two-party system to provide voters with a clear choice between two alternatives and produce dominant single-party majority governments.[3] Two party systems also tend to be one-dimensional in that the two parties generally only differ on one main issue.[4]
Electoral systems in majoritarian polities generally follow the first-past-the-post style of elections and use single member districts. Whoever wins the most votes in a given district, whether a plurality or a majority, wins the seat. While this is the most common electoral format in Westminster model democracies, there are some exceptions. Australia uses the alternative vote system, in which voters order the candidates in terms of preference. First, they calculate the vote based on voters' first choices. If no candidate wins a majority, the candidate who received the least number of votes is eliminated, and his or her votes are redistributed to the voters' second choice candidate. This process continues until one candidate wins a majority of the votes in that district; thus, it is often considered a true majority election formula.[5]

Despite their electoral and party structures, third parties have been able to win seats in all three states included in the current study, albeit with varying degrees of success. Generally, one of the two traditional parties represents the ideological left, which is popular with the working class, and the other stands for the ideological right, which traditionally appeals to the middle class.[6] In the UK, the traditional parties are the Labour Party, which has historically been ideological left party, and the Conservative Party, which has been the ideological right party; however, the Liberal Democrat Party has emerged as a strong, ideologically centrist third party. In Canada, the established national parties are the Liberal Party and the Conservative Party, where the Liberal Party represents the ideological left and the Conservative Party embodies the ideological right. A variety of minor parties are prominent. Together minor parties have garnered about thirty percent of the votes in recent elections.[7] Two-party politics is strongest in Australia. The Australian Labor Party is the traditional party of the ideological left, while the Liberal-National Coalition represents the traditional party of the ideological right. Although there are a variety of minor parties, the most notable is the recent rise of the Green Party in Australia, which has increased its share of the vote from 1% in 1990 to 12% 2010.[8]

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[3] Lijphart 1999.
[4] Ibid.
[5] Ibid.
[6] Inglehart 1990.
[7] Parliament of Canada.
[8] Newman 2004-2005 (for years 1987-2004); Australia Votes 2007; Australia Votes 2010.

Hung Parliaments

Elections in Westminster model parliamentary democracies are designed to produce stable single-party majority governments. However, exceptions do occur, and these exceptions are referred to as hung parliaments. By definition a hung parliament is "one in which no party has an overall majority," meaning also that no single party has won more than half of the parliamentary seats.[9] Generally, hung parliaments have been interpreted as isolated electoral anomalies.[10]

The most recent elections in the UK, Canada, and Australia have all produced hung parliaments. Before Australia's 2010 election, its most recent hung parliament occurred in 1940.[11] In the UK, before the 2010 general election the most recent hung parliament occurred in 1974.[12] Of the three states compared in the present study, Canada has experienced hung parliaments most frequently. Of the nine federal elections held between 1957 and 1979, six resulted in hung parliaments. However, from the 1980 election until the 2004 election Canadian federal elections produced majority governments each time. The federal elections of 2004, 2006, and 2008 all produced hung parliaments.[13] However, the phenomenon of hung parliaments has largely been ignored in the literature. The purpose of this study is to identify factors that explain this current wave of hung parliaments in advanced industrial Westminster model parliamentary democracies.

The Decline of Class-Voting and the Rise of Postmaterialist Values

Traditionally, class has been the primary electoral cleavage. Some scholars argue, however, that in advanced industrial societies the emergence of new social issues has led to a decline in the dominance of class-based voting.[14]

Clark and Lipset argue that the importance of class in advanced industrial societies is decreasing because "in recent decades traditional hierarchies have declined and new social differences have emerged."[15] Clark and Lipset claim that class-based voting has declined and is being replaced by post-industrial politics, which they refer to as the New Political Culture (NPC). The following circumstances define the NPC: (1) social and economic issues are clearly distinguished; (2) social issues and consumption issues are more salient as compared to fiscal/economic issues; (3) issue politics and more widespread citizen participation are increasing while hierarchical political organizations have declined; and (4) the NPC views are more prevalent in younger, more educated, and more affluent people and societies.[16] Clark and Lipset ground their reasoning in terms of the economy and the family, which relate to the decreased influence of hierarchical social structures. It is these hierarchies, they argue, that

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9 BBC News 2010.
10 Kalitowski 2008.
11 Liddy 2010.
12 Butler and Kavanagh 1974.
13 Parliament of Canada 2009.
14 Clark and Lipset 2001; Inglehart 1990; Dalton 2002.
15 Clark and Lipset 2001, 40.
16 Ibid., 278.

maintain rigid class structures. They contend that political issues change with increased affluence: with increased affluence, people will take basic security needs for granted and consider other things, including lifestyle and amenity issues. This decreases the power of class and hierarchy.[17] They also argue that the family has embraced more egalitarian values, which further decreases the importance of hierarchical arrangements in society.[18]

However, Hout, Brooks, and Manza dispute Clark and Lipset's claim that class is declining; instead they argue that class is becoming more complex. They concede that dichotomous class models are no longer appropriate, but affirm that this does not mean class is dying. Hout and his colleagues make several specific criticisms of Clark and Lipset's work. First, they point to the persistence of income inequality despite the growth of the middle class to show that class is still relevant in the modern context.[19] From a methodological stance, they argue that the Alford Index used by Clark and Lipset to measure the decline of class-based voting is too crude and underestimates the importance of class in voting.[20] [21] Most importantly, they argue that Clark and Lipset do not clearly make the case relating hierarchy and class.[22] This critique points to the conceptual gap in Clark and Lipset's argument.

While Clark and Lipset focus on hierarchical societal structures that promote rigid class stratification, Inglehart's theory of postmaterialist values focuses on the impact of increased affluence on an individual's value priorities, drawing primarily on Maslow's hierarchy of needs. His argument is two-fold. First, Inglehart posits that when people experience economic scarcity and hardship they will give high priority to economic security and safety needs. However, people in an environment of affluence do not experience the same scarcity, so they will move beyond economic security and safety needs and place more value on higher order aesthetic and intellectual needs, which he refers to as postmaterialist values.[23] Second, Inglehart stresses that the conditions in which one grows up are most important, since it is when values form. Because of this he stresses that the impact of postmaterialist values should increase over time as more people grow up in affluent circumstances.[24]

Inglehart recognizes that materialist values, those based on economic security and safety needs, will still be prevalent in society. This leads him to argue that postmaterialists will prefer change-oriented political parties.[25] Traditionally, the "change-oriented" parties are those of the ideological Left. This would lead affluent, middle-class voters to vote for Leftist political parties despite their class-based connection with the parties of the Right. Furthermore, working class

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[17] Clark and Lipset 2001, 41.
[18] Ibid., 51.
[19] Ibid., 60.
[20] The Alford Index is calculated by subtracting the percentage of middle class voters who vote for the traditionally working class party from the percentage of the working class that vote for the working class party.
[21] Ibid., 63.
[22] Ibid., 59.
[23] Inglehart 1971.
[24] Ibid.
[25] Ibid.

voters, who are more likely to experience scarcity and possess materialist values, may choose to vote for the parties of the Right who traditionally espouse those values.[26] Because of this, Inglehart contends, "The rise of Postmaterialist issues, therefore, tends to neutralize political polarization based on social class."[27]

Dalton characterizes Inglehart's framework as "the most systematic attempt to describe the value changes that are transforming advanced industrial societies."[28] Dalton makes a clear distinction between materialist and postmaterialist values. Values that stem from physiological needs, which include both sustenance and safety needs, are deemed materialist; these values include economic stability, economic growth, fighting rising prices, strong defense forces, fighting crime, and maintaining order. After safety and sustenance needs are met, people can attend to their social and self-actualization needs. Postmaterialist values stem from these higher order needs and include having a less impersonal society, having more say in your job or community, having more say in government, valuing free speech, believing that ideas count, and valuing green space.[29]

However, he also identifies two key areas of criticism of Inglehart's argument. The first pertains mostly to Inglehart's methodology. Several studies argue that Inglehart's value index is closely associated with the tides of economic conditions instead of the conditions of one's childhood. The other school of criticism debates the nature of value change. Flanagan argues that values are changing on more than just a single material/postmaterial dimension, while Braithwaite contends that societal values are moving from security-based to harmony-based values[30]. Dalton concedes that Inglehart's theory is overly simplistic, but also contends that critics who disagree on the nature of value change can fit their frameworks within Inglehart's broader one.

Beck presents another critique of the postmaterialist values argument. He posits that societies have moved from the first modernity to the second modernity. The first modernity entails "the collective patterns of life, progress and controllability, full employment and exploitation of nature;" however, the developments of the first modernity have been fraught with unintended consequences, which the second modernity must now rectify.[31] Thus, the recent concern with issues like environmentalism and nuclear disarmament, which are postmaterialist values from Inglehart's perspective, actually is the result of the consequences of development during the first modernity. Thus, for Beck the second modernity is reflexive.[32] While Beck presents an interesting alternative thesis to the discussion of value change, he still seems to agree that postmaterialist society or second modernity has different values than materialist society of first modernity. Thus, while the exact nature of value change is still being

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26 Inglehart 1990.
27 Ibid., 259.
28 Dalton 2002, 79.
29 Ibid.
30 Ibid.; Flanagan 1982; 1987; Braithwaite 1996.
31 Beck 1999, 2.
32 Ibid.

debated, scholars agree that values have changed in advanced industrial societies; it is this point that is central to the current study.

Both Dalton and Inglehart posit the existence of a New Politics dimension that accounts for the emergent postmaterialist values.[33] Dalton distinguishes between the "Old Politics" and "New Politics" to differentiate between traditional and postmaterialist political alignments.[34] Class is the primary factor that structures the old political cleavages, with the Old Left representing the working class and labor unions and the Old Right identifying with business interests and the middle class.[35] New Politics is the postmaterialist political dimension. While Dalton recognizes that Old Politics is still the primary ground for partisan conflict, he argues that New Politics affects party systems in advanced industrial societies, because "it can cut across the established Old Politics cleavage."[36] Since new political cleavages do not line up with old political cleavages, the emergence of this second dimension does not further polarize the major parties. Also, non-established parties have been more likely to adopt postmaterialist positions than the major parties, which has helped smaller parties be more successful.[37] Furthermore, the introduction of the New Politics cleavage has contributed to partisan dealignment, which refers to "the erosion of the social group basis of party support."[38] This trend has increased electoral volatility and loosened the hold that the cleavages of Old Politics had on voter choice.

This may also help to explain the importance of anti-party sentiment amongst electorates in the UK, Canada, and Australia. Belanger contends that there is a feeling of "political malaise" in postindustrial nations; people are becoming more critical of political parties, especially after those parties fail to meet the electorate's expectations for policy and service provision. While Belanger does not specifically connect his argument to those made by Dalton, this could be due to Dalton's claim that it is generally minor parties that embrace postmaterialist platforms rather than the traditional parties. Similarly, Belanger argues that while this feeling is detrimental to major parties, it can be positive for third parties. Political malaise manifests itself in two forms: negative attitudes toward the major parties, which he calls specific antiparty sentiment and negative attitudes towards parties *per se*, which he refers to as general antiparty sentiment.[39] He finds that antipartyism brings people to vote for third parties. This is especially true of people who feel specific antiparty sentiment; however, third parties who utilize antiparty rhetoric and paint themselves as "antiparty parties" benefit from general antiparty sentiment as well.[40]

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33 Dalton 2002; Inglehart 1990.
34 Dalton 2002, 134.
35 Ibid.
36 Ibid.
37 Dalton 2002.
38 Ibid., 183.
39 Belanger 2004.
40 Ibid.

THEORETICAL FRAMEWORK AND HYPOTHESES

But why are these developments relevant to the recent wave of hung parliaments in majoritarian states? The decline of the old political cleavage of class and the rise of new political postmaterialist issues has complicated the way in which people vote. The choice is no longer between two distinct alternatives as proponents of the Westminster model claim. Class is declining in its importance because other issues – postmaterialist social issues – are rising in saliency. Thus, voters are no longer simply voting for whichever party most naturally represents them based on their class background.

This study will draw primarily on Inglehart's conception of postmaterialist values and Dalton's analysis of party politics in response to the rise of these values. The central hypothesis of this work is that the decline of Old Politics and the concurrent rise of New Politics explains the increased frequency of hung parliaments in advanced industrial Westminster model parliamentary democracies. From this, I posit two hypotheses:

H_1: The decline of class-based voting increases the likelihood of hung parliaments

H_2: The increase of postmaterialist values increases the likelihood of hung parliaments

Following Dalton's argument that the rise of postmaterialist values has contributed towards party dealignment, I also predict the following:

H_3: Decreased partisanship increases the likelihood of hung parliaments.

Furthermore, non-established parties are more likely than traditional parties to embrace and support postmaterialist issues. From this, I expect that minor parties that have incorporated postmaterialist values and also antiparty sentiment towards major parties because they have not adapted to these issues, which leads to the following hypotheses:

H_4: Increased specific antiparty sentiment increases the likelihood of hung parliaments.

H_5: Incorporation of post-materialist values by minor parties increases the likelihood of hung parliaments.

METHODS

This study is a small comparative case study that includes the following cases: the United Kingdom, Canada, and Australia. These cases have been selected because they are all advanced industrial Westminster model parliamentary democracies that have experienced recent hung parliaments. This study approaches hung parliaments not only from a cross-national perspective, but also from a longitudinal one. General elections from the following years are included in the study: from 1983 until 2010 in the UK, from 1984 until 2008 in Canada, and from 1987 until 2007 in Australia.

OPERATIONALIZATION AND MEASUREMENT

Dependent Variable:

Occurrence of Hung Parliament: While a dummy variable could be used to denote whether or not a state's general election resulted in a hung parliament, this study operationalizes the hung parliament variable instead as the size of the majority, in terms of parliamentary seats obtained by the party that wins the most seats in the election. Explicitly, this will be measured as the percentage of parliamentary seats won by the "winningest" party, which controls for the size of the parliament. This variable indicates a hung parliament when the value of this measure is less than fifty percent.

Independent Variables:

Class-based voting: To measure class-based voting the Alford Index is used. This measure subtracts the proportion of middle-class voters who vote for the working class party from the proportion of working class voters who vote for the working-class party.

Postmaterialist values: To measure the prevalence of postmaterialist values in each of the states in this study, I use the four-item index of postmaterialist values from the World Values Survey.[41] This index is derived from the following question series: "If you had to choose, which one of the things on this card would you say is most important? And which would be the next most important?" The answer choices are: "maintaining order in the nation," "giving people more say," "fighting rising prices," and "protecting freedom of speech." Depending on their answers to both questions, respondents are coded as materialist, postmaterialist or mixed. For each country, the measure used is the percentage of respondents that are coded as postmaterialist on this index.

Strength of Party Identification: To measure strength of party identification, the following question is used: "Would you call yourself a very strong (fill in party), fairly strong, or not very strong?" The measure used is the percentage of respondents who indicate very strong party identification as a proportion of the total sample, which includes respondents who did not identify with a political party.

Strong Antiparty-sentiment: In accordance with Belanger's operationalization of this sentiment, questions from election studies asking for the respondent's feelings toward major parties are used. If the respondent expresses negative feelings toward both major parties, they exhibit specific antiparty sentiment. Questions used to measure this variable are worded similarly to the following: "How do you feel about the [insert appropriate party]?" Strong antiparty sentiment is measured as the percentage of respondents that indicated strong negative feelings toward both major parties.

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[41] European and World Values Surveys four-wave integrated data file; World Values Survey 2005 official data file.

Index of Third Party Ideology: This index ranges from zero to two and is comprised of two criteria: social justice issues in minor party ideologies and success of green parties. With regards to the former, third party platforms are referenced where available for mentions of social justice and equality for women and minority groups. Where party platforms are not available, secondary data describing the political parties is used. Environmentalism is another prong of postmaterialism. However, the presence of this cannot be measured by looking at party platforms because in the contemporary political climate, most parties, not just third parties, take a stance on environmental issues. A better indicator of the importance of environmental issues is the presence of a green party. However, the mere presence of a green party does not indicate that it is politically strong. Therefore, this study counts only green parties that won at least one parliamentary seat in the general election. These two indicators, inclusion of women's and minority rights into the party's election platform and the presence of a seat-winning green party, are combined into an index of post-materialist value incorporation. This index ranges from 0 to 2, where zero means neither criterion is met. One indicates that one of the criterions is met, and two indicates that both criteria are met.

DATA AND ANALYSIS PLAN

Most of the data for this study is gathered from the Australian Election Study (AES), the Canadian Election Study (CES), and the British Election Study (BES). However, the data regarding postmaterialist values came from the World Values Survey (WVS). While it would have been ideal to measure postmaterialist values using the various national election studies, no question or set of questions regarding postmaterialist values has been consistently asked across all three nations over time. Although the waves of the WVS do not directly correspond to the election years in the UK, Canada, and Australia, this data is preferable because it asks consistently worded questions to respondents in all three nations for each wave, providing greater consistency over time and across cases. Therefore, the data for each country from the wave of the WVS that is closest to the election is used as a measure of postmaterialist values at the time of the election. Finally, data regarding the dependent variable is obtained from election result archives. The data will be analyzed using a series of multiple least squares linear regressions. Preliminarily, bivariate correlations are run at each stage of the analysis to test for multicollinearity. Next, regression models are run for the entire model using data from all three cases. Then, separate regression models are run for each country individually. Because of the small number of general elections included in this study, a significance level of .10 is used.

DATA ANALYSIS

Analysis Across All Cases

The bivariate correlations show that multicollinearity exists between the percentage of respondents who exhibit antiparty sentiment and both the percentage of respondents who are strong party identifiers and the Alford Index of class voting. To account for this, five separate multiple regressions are run: one including all variables (Model 1), one excluding antiparty

sentiment (Model 2), one excluding strong party identifiers (Model 3), one excluding class voting (Model 4), and finally one excluding both strong party identifiers and class voting (Model 5). Model 2 and Model 5 completely alleviate the effects of multicollinearity from the analysis.

Table 1: Postmaterialist Values and the Occurrence of Hung Parliaments in All Cases
Dependent Variable: Occurrence of Hung Parliament, in percentage of seats won by the winningest party (1983-2010)

Model Make-Up (Variable excluded to account for collinearity)	Model 1 All variables included	Model 2 Strong Antiparty Sentiment Excluded	Model 3 Strong Party Identifiers excluded	Model 4 Class voting excluded	Model 5 Class voting and Strong party identifiers excluded
Dependent Variable					
Class Voting (Alford Index)	0.050 (.140)	.069 (.097)	.072 (.140)		
Postmaterialist Values	-.144 (.216)	-.359* (.188)	-.152 (.218)	-.167 (.209)	-.188 (.210)
Percent of Strong Party Identifiers	.421 (.377)	.992** (.311)		.442 (.381)	
Strong Antiparty Sentiment	-1.709* (.096)		-1.880* (.948)	-1.603** (.723)	-1.887** (.687)
Index of Third Party Ideology	-6.149 (5.161)	-6.958 (5.750)	-6.738 (5.179)	-6.705 (5.245)	-7.317 (5.274)
Adjusted R^2	.418	.454	.418	.378	.364
F-test	3.692	5.365	4.229	3.885	4.630
Model Significance	(.027)	(.006)	(.019)	(.023)	(.016)
N	19	19	19	19	19

***p<.001, **p<.05, *p<.10

Model 1 includes all five variables. The model is significant (p<.027) and accounts for 41.8% of the variance in the dependent variable, the percentage of parliamentary seats won by the winningest party. However, because of the multicollinearity, the only variable that is significant is antiparty sentiment in the expected direction: as strong antiparty sentiment increases, the percentage of seats won by the winningest party decreases, which means that hung parliaments are more likely. Excluding antiparty sentiment from the analysis resolves the problem created by multicollinearity.

Model 2, which excludes anti-party sentiment and resolves the multicollinearity problem, is significant (p<.006) and accounts for 45.4% of the variance. Both postmaterialist values and strong party identifiers are significantly related to the percentage of seats won by the winningest party in the hypothesized directions. As the percentage of respondents who are postmaterialist increase, the percentage of seats won by the winningest party decreases making hung parliaments more likely. As the percentage of respondents who are strong party identifiers decreases, the percentage of seats won by the winningest party decreases.

Models 3, 4 and 5 exclude strong party identifiers, class voting, or both, respectively. Each of these models is significant; however, the only significant independent variable is antiparty sentiment. This suggests that the antiparty sentiment variable is picking up on variance in the dependent variable that can be attributed to class voting and strong party identification. Class voting and the third party ideology index are not significant in any of the five models.

The United Kingdom

Amongst only the UK cases, bivariate correlations show that class voting is significantly negatively correlated with the third party ideology index, and postmaterialist values are significantly and negatively correlated with the percentage of respondents that are strong party identifiers. This again poses the problem of multicollinearity. To avoid multicollinearity a variety of different regression models are run. The first model includes all five independent variables. Models 2 through 6 each exclude one of the independent variables. These models do not completely alleviate the multicollinearity issue, since no single variable is responsible for this problem as in the overall analysis. To completely resolve multicollinearity, Model 7 excludes both class voting and postmaterialist values, and Model 8 excludes both the percentage of respondents who are strong party identifiers and the third party ideology index.

Table 2A: Postmaterialist Values and the Occurrence of Hung Parliaments in the UK: Models 1-4
Dependent Variable: Occurrence of Hung Parliament, in percentage of seats won by the winningest party (1983-2010)

Model Make-Up (Variable excluded to account for collinearity)	Model 1 All variables included	Model 2 Class voting excluded	Model 3 Postmaterialist values excluded	Model 4 Strong party identification excluded
Dependent Variable				
Class Voting	.938 (.690)		1.224 (.743)	-.491 (.961)
Postmaterialist Values	.803 (.636)	1.086 (.716)		.545 (1.313)
Strong Party Identification	2.465 (.887)	1.567 (.706)	2.301 (.999)	
Strong Antiparty Sentiment	-2.127 (1.790)	-.529 (1.610)	-2.845 (1.934)	1.147 (2.814)
Third Party Ideology	5.095 (1.790)	-12.545 (5.643)	12.960 (14.048)	-21.929 (20.497)
Adjusted R^2	.709	.586	.622	.270
F-test	3.923	3.120	3.471	.681
Model Significance	(.365)	(.257)	<.236)	(.667)
N	7	7	7	7

*p<.10, **p<.05, ***p<.001

Table 2B: Postmaterialist Values and the Occurrence of Hung Parliaments in the UK: Models 5-8
Dependent Variable: Occurrence of Hung Parliament, in percentage of seats won by the winningest party (1983-2010)

Model Make-Up (Variable excluded to account for collinearity)	Model 5 Strong Antiparty Sentiment Excluded	Model 6 Third Party Ideology Excluded	Model 7 Class voting and postmaterialist values excluded	Model 8 Strong party identification and third party ideology excluded
Dependent Variable				
Class Voting	.399 (.571)	.699* (.178)		.410 (.474)
Postmaterialist Values	1.043 (.662)	.909 (.428)		-.561 (.829)
Strong Party Identification	1.771 (.733)	2.234** (.475)	.904 (.663)	
Strong Antiparty Sentiment		-1.627 (.880)	-.878 (1.907)	-.510 (2.405)
Third Party Ideology	-7.346 (9.903)		-8.773 (6.064)	
Adjusted R^2	.649	.835	.406	.331
F-test	3.772	8.573	2.368	.503
Model Significance	(.220)	(.107)	(.249)	(.707)
N	7	7	7	7

*p<.10, **p<.05, ***p<.001

None of the models are significant. However, in Model 6, which excludes the third party ideology index, class voting and the percentage of respondents who are strong party identifiers are significant. These relationships are significant in the hypothesized directions: as the class voting decreases, the percentage of seats won by the winningest party decreases, and as the percentage of respondents who are strong party identifiers decreases the percentage of seats won by the winningest party decreases. While Model 6 itself is not significant, it accounts for 83.5% of the variance in the dependent variable. This suggests that lack of significance may be attributable to the small sample size.

The prevalence of postmaterialist values is not significant in any of the models. Antiparty sentiment is not significant in any of the models and is not significantly correlated with any of the other independent variables. This stands in sharp contrast to the overall analysis where antiparty sentiment is highly correlated with two of the independent variables and the only significant independent variable when it is included in the model. This and the overall insignificance of any of the models suggest that the UK does not follow the pattern observed in the overall analyses.

Analysis of Canada

Amongst only the Canadian cases, the third party ideology index is excluded from the Canadian analyses because it did not vary. All cases received a value of one, because there have

consistently been third parties that espouse postmaterialist values, but a green party has never won a parliamentary seat. The bivariate correlations indicate that postmaterialist values are significantly correlated with the percentage of respondents who are strong party identifiers and the percentage of respondents who exhibit strong antiparty sentiment. Also, class voting is correlated with strong antiparty sentiment.

Again, these correlations introduce the problem of multicollinearity to the multiple regression analysis. To account for this multiple models are run. The first model includes all four independent variables. Models 2 through 5 each exclude a different independent variable. Model 6 excludes both the percentage of respondents who are strong party identifiers and the percentage of respondents who exhibited strong antiparty sentiment. Model 7 excluded both class voting and postmaterialist values.

Table 3A: Postmaterialist Values and the Occurrence of Hung Parliaments in Canada: Models 1-3
Dependent Variable: Occurrence of Hung Parliament, in percentage of seats won by the winningest party (1984-2008)

Model Make-Up (Variable excluded to account for collinearity)	Model 1 All variables included	Model 2 Strong antiparty sentiment excluded	Model 3 Postmaterialist values excluded
Dependent variable			
Class Voting	-.704 (.554)	.314 (..482)	.640 (1.268)
Postmaterialist Values	-4.599 (1.160)	-2.091** (.571)	
Strong Party Identifiers	.518 (.427)	-.049 (.554)	.149 (1.206)
Strong Antiparty Sentiment	1.634 (1.282)		-2.242 (2.393)
Adjusted R^2	.915	.912	.288
F-test	.14.409	21.847	1.674
Model Significance	(.195)	(.015)	(.395)
N	6	6	6

***p<.001, **p<.05, *p<.10

Table 3B: Postmaterialist Values and the Occurrence of Hung Parliaments in Canada: Models 4-7
Dependent Variable: Occurrence of Hung Parliament, in percentage of seats won by the winningest party (1984-2008)

Model Make-Up (Variable excluded to account for collinearity)	Model 4 Strong Party Identifiers excluded	Model 5 Class voting excluded	Model 6 Strong party identifiers and strong antiparty sentiment excluded	Model 7 Class voting and postmaterialist values excluded
Dependent variable				
Class Voting	-.574 (.605)		.334 (.371)	
Postmaterialist Values	-4.292* (1.259)	-4.376** (1.205)	-2.046*** (.232)	
Strong Party Identifiers		.590 (.584)		.493 (1.173)
Strong Antiparty Sentiment	1.255 (1.381)	2.552 (1.642)		-2.755 (1.508)
Adjusted R^2	.895	.819	.934	.266
F-test	15.153	10.026	43.577	2.086
Model Significance	(.063)	(.045)	(.002)	(.240)
N	6	6	6	6

***p<.001, **p<.05, *p<.10

Model 1 is not significant, nor is any of its independent variables, which is most likely due to the various multicollinearity issues present in this model. In all of the subsequent models, the prevalence of postmaterialist values is the only significant independent variable. Furthermore, the relationship always is in the hypothesized direction: as the prevalence of postmaterialist values increases, the percentage of seats won by the winningest party decreases. Furthermore, only models 2, 4, 5 and 6 are significant, but models 3 and 5 are not. The key difference between these two sets of models is that the former includes the postmaterialist values variable and the latter does not. The most instructive comparison is between Model 6 and Model 7 both of which completely resolve any multicollinearity problems. Model 6 accounts for 93.4% of the variance in the dependent variable and only the postmaterialist values variable is significant, while Model 7 excludes postmaterialist values and only accounts for 26.6% of the variance. This suggests that the prevalence of postmaterialist values is most important in explaining the size of the parliamentary majority in Canadian elections.

Analysis of Australia

When analyzing only the Australian cases the third party ideology index is also excluded because it does not vary. While there has also been a history of third parties espousing postmaterialist values, the 2010 election is the first federal election in which a green

party candidate won a seat in the House of Representatives. However, the 2010 Australian Election Study data is not available at the time of writing and the election has been excluded. Therefore, all Australian elections scored a value of one for the third party index variable.

Table 4: Postmaterialist Values and the Occurrence of Hung Parliaments in Australia
Dependent Variable: Occurrence of Hung Parliament, in percentage of seats won by winningest party (1987-2007)

	Model 1 All variables included	Model 2 Strong antiparty sentiment excluded	Model 3 Postmaterialist values excluded
Independent Variables			
Class Voting (Alford Index)	-1.060 (.321)	-.913** (.130)	-1.076*** (.088)
Postmaterialist Values	.362 (.154)	.424** (.081)	.339*** (.043)
Percent of Strong Party Identifiers	1.043 (1.963)		.988** (.156)
Strong Antiparty Sentiment	-.172 (10.473)	-5.634* (1.588)	
Adjusted R^2	.880	.923	.958
F-test	10.185	21.036	53.870
Model Significance	(.230)	(.046)	(.001)
N	6	6	6

***p<.001, **p<.05, *p<.10

The percentage of respondents who are strong party identifiers is significantly correlated with the percentage of respondents who exhibit strong antiparty sentiment, which indicates multicollinearity. The problem of multicollinearity is addressed by running three different models. Model 1 includes all four independent variables. The second model excludes the percentage of respondents who are strong party identifiers. The third model excludes the percentage of respondents who exhibited strong antiparty sentiment.

Due to multicollinearity, the first model is not significant nor is any of its independent variables. However, Model 2 is significant and accounts for 92.3% of the variance in the dependent variable. All three included independent variables are significant. Model 3 is also significant and accounts for 95.8% of the variance in the dependent variable. All the variables included in the model are significant.

In Model 2, the percentage of respondents who exhibit strong antiparty sentiment is significant in the expected direction: as the percentage of respondents exhibiting antiparty sentiment increases, the percentage of seats won by the winningest party decreases. In Model 3, the percentage of respondents who are strong party identifiers is significant in the expected direction: as the percentage of respondents who are strong party identifiers decreases, the percentage of seats won by the winningest party decreases making hung parliaments more

likely. Class voting is significant in both Model 2 and Model 3, but not in the expected direction: as class-based voting decreases, the percentage of seats won by the winningest party increases. In both Model 2 and Model 3, the prevalence of postmaterialist values is significant, but not in the expected direction. The data show that as the prevalence of postmaterialist values increases, the percentage of seats won by the winningest party increases. Possible reasons for these unexpected results will be discussed in the following section.

DISCUSSION

This study set out to find a causal explanation for hung parliaments that is applicable across all cases. The significance of Model 2 in the overall cross-country analysis, as well as the significance of postmaterialist values and the percentage of respondents who are strong party identifiers, all support the theory that the rise of postmaterialist values and corresponding developments contribute to the increased prevalence of hung parliaments. Three of the five hypotheses are supported: those regarding the prevalence of postmaterialist values, the percentage of respondents who are strong party identifiers, and the level of antiparty sentiment (H_2, H_3, and H_4). The hypotheses regarding class voting and the ideology of third parties are supported. The simultaneous support of the postmaterialism hypothesis and the lack of support for class voting suggest that these two developments occur independent of each other and lends credence to Hout, Brooks, and Manza's argument that class is not declining. However, the country-by-country analysis shows that no consistent relationship exists across all three cases. The analyses of each country show a different relationship between the independent and dependent variables, which suggests that the national context plays an important role in hung parliament electoral outcomes.

The UK

The analyses of the UK cases show that my theory does not account for the results of the general elections in this case. Of all three countries, the UK is the only case in which none of the multiple regression models are significant. This could be due to a variety of factors. Firstly, class-based voting remains strongest in the UK. Dalton finds that class interests continue to be important in British politics, but that this influence has declined by approximately fifty percent between 1950 and 2000.[42] However, even with this decline class voting in the UK is still higher than the other cases in Dalton's study, the US, France and Germany. This is congruent with the finding in Model 6 of the UK analyses that as class voting decreases – as indicated by lower scores on the Alford Index – the percentage of parliamentary seats won by the winningest party decreases. Thus, the decline in class voting that has been noted by Dalton is related to increasingly narrow electoral margins. However, this study uses a much smaller time period than Dalton's investigation, which suggests that the observed trends are less pronounced. This could explain why the class-based voting variable was only significant in one model and why no models are significant.

[42] Dalton 2002.

Dalton also finds that the UK has lower levels of postmaterialist values than many other advanced industrial nations.[43] It seems that the UK is lagging behind Canada and Australia in terms of the developments of these values. This case exhibits less pronounced changes than Canada and Australia, and the significance of the models could then be more highly impacted by the small number of cases. In order to better understand the UK case, it would be useful to use a longer period of time. It could be useful to not only go further back in time but also analyze new data that comes out in the future. This will help to identify whether or not the rise of postmaterialism and the decline of class are becoming stronger in the UK.

Canada

Of the three countries included, the analysis of the Canada shows the clearest support for the postmaterialist theory. The increased prevalence of postmaterialist values is related to a decline in the percentage of seats won by the winningest party in each significant model where the postmaterialist values variable is included. Furthermore, each model that includes the postmaterialist values variable explains more than 80% of the variance in the percentage of seats won by the winningest party. However, the postmaterialist values variable is the only significant independent variable in any of the models. From the bivariate analyses, we see that the prevalence of postmaterialist values is positively related to strong antiparty sentiment and negatively related to the percentage of respondents who are strong party identifiers. Since the data are only bivariate correlations it cannot be discerned whether the change in postmaterialist values causes a change in antiparty sentiment and strength of party identification or vice versa. More research is needed to determine the causal direction of these relationships.
According to the theory presented here, one would expect that the increased prevalence of postmaterialist values amongst the electorate is causing increased antiparty sentiment against major parties and a decline in the percentage of people who consider themselves strong party identifiers because major parties have not incorporated postmaterialist values into their platforms. Also, decreased levels of class-based voting are related to levels of strong antiparty sentiment. Again, the causal direction of this relationship cannot be proven without further research, but it is hypothesized that as people become more disgruntled with the traditional parties, they will be less likely to vote with their natural "class" party.

Finally, class-based voting is not significant in any of the models. This lends further credence to Hout, Brooks, and Manza's argument that class may not be declining as a significant electoral cleavage. The fact that class-based voting and postmaterialist values are not related to each other also further indicates that the processes of increasing postmaterialist values and declining class are independent of each other.

Australia

The Australian case provided two unexpected results. Both class-based voting and the prevalence of postmaterialist values are related to the percentage of seats won by the

[43] Ibid.

winningest party, but in the opposite direction than was hypothesized. Firstly, as class-based voting decreases, the percentage of seats won by the winningest party increases. Secondly, as the prevalence of postmaterialist values increases, the percentage of seats won by the winningest party increases.

In order to explain these findings, it was necessary to examine the responses to the individual questions in the World Values Survey (WVS) from which the postmaterialism index is derived. Between the two Australian waves of the WVS (1995 and 2005), the biggest shift in respondents' first priority is a ten percentage point increase in the number of respondents who named maintaining order in the nation. Furthermore, maintaining order in the nation is cited as respondents' first choice about twice as often as fighting rising prices in both 1995 and 2005.

These results can be reconciled with Australia's recent economic and security situations. With regards to its economy, Australia experienced seventeen consecutive years of economic growth until the global financial crisis. After the financial crisis, Australia's economy rebounded after only one quarter of negative economic growth, and the government expects to return to budget surpluses by 2015.[44] This history of strong economic conditions in Australia explains the comparative unimportance of economic issues when measured against maintaining order in the nation.

In the early 2000s, illegal immigration became Australia's most salient security issue. The increased importance placed on the issue of illegal immigration is most likely driving the decline in postmaterialist values from 1995 to 2005 and may account for the observed positive relationship between postmaterialist values and the percentage of seats won by the winningest party. Results from the Australian Election Study indicate that the percentage of seats won by the winningest party may be a function of the degree of consensus in the Australian electorate on which party is seen as best on issues of national security and defense.[45] Thus, the salience of security issues causes a decrease in the level of postmaterialist values, and the divide in the electorate over which party is best suited to handle these issues could be correlated with declining electoral majorities. Furthermore, this shift from viewing the coalition as overwhelming more capable of dealing with security issues may have led some voters – most likely working class voters who had voted for the coalition because of their strong position on national security - to return to their "natural" class-based parties. This accounts for the finding that as class-voting increases, the percentage of seats won by the winningest party decreases. In the future, it will be interesting to see how class-based voting and postmaterialism are impacted if and when the issue of illegal immigration loses political salience.

LIMITATIONS

This study is limited in a several ways. First, only a small number of elections are included for each case. This is due to the lack of Australian data, as the Australian Election

[44] CIA World Factbook 2010.
[45] McAllister and Clark 2010, 16.

Study only bean being conducted in 1987. In order to cover a comparable time span for each country, the data for earlier elections for Canada and the UK are not included. In closer analyses of these two cases, it would be beneficial to use a longer time span.

Also, another central weakness is the operationalization of the third party ideology index. The index was not detailed enough to allow for adequate variation between cases and had to be excluded from both the Australian and Canadian analyses, which made it impossible to test the fifth hypothesis in these analyses. Where it has been included in the analysis, the third party ideology index is never significant. This could be due to the limits of the measure and not the unimportance of third party ideology itself. A better measure would account for more dimensions of postmaterialist values than social justice and environmental issues and allow for a wider range of variance. Data from the election studies could be used in crafting such a measure, since questions are generally asked about which party is seen as most capable of dealing with various issues. These sorts of questions could be useful in creating a more nuanced index. However, a more in depth understanding of third party ideologies and how that ideology is manifested is required in order to do this. If this concept were accurately measured, further analysis may in fact show that it does play a role in explaining electoral outcomes.

FUTURE RESEARCH & CONCLUSIONS

Since this study cannot conclude that its framework provides a universal explanation for the occurrence of hung parliaments, future research should focus on the individual countries included in the study, in order to better understand the role of the national context. Future research should also investigate the impact of illegal immigration on postmaterialist values and on electoral outcomes in Australia. The Canadian case should be further evaluated in order to ascertain why postmaterialist values play a much larger role there than in other countries. Alternative explanations should be investigated for the UK, since this theory does not seem to explain the cause of its hung parliament. Also, antiparty sentiment should be further researched since it was the variable that most often exhibited a relationship with the other independent variables. Research is needed that investigates the causal relationship between antiparty sentiment and class voting, postmaterialist values, and strong party identification. This could prove important in better understanding the role of these variables in contributing to the occurrence of hung parliaments.

This study has endeavored to find a universal explanation for the occurrence of hung parliaments in advanced industrial democracies. However, the current study has not met this lofty goal. While the implications of the rise of postmaterialism seem to explain hung parliaments in Canada, the UK and Australian cases do not provide such clear-cut support for the present theory. Despite these mixed results, this study has found some causal factors that influence electoral results in majoritarian parliamentary democracies. This is an important first step in explaining why hung parliaments occur and to what extent the national context plays a role in these outcomes.

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