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How the world votes: The political consequences of ballot design, innovation and manipulation☆

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Abstract

There has been limited research into the impact of some aspects of voting procedure but very little research into ballot paper design and the act of voting in itself. This article gives a historical overview of the evolution of voting procedures from ancient times to the modern day, describes the results of a survey of 134 paper ballots used over the last decade for national legislative, executive and referenda elections in 107 countries, and gives the findings of a laboratory experiment testing the impact of ballot paper design. The evidence suggests three things: first, elaborate ballots (incorporating colors, symbols and photographs) are more likely to be found where literacy is lower and competitive multi party elections are a new phenomenon. But elaborate ballots are not significantly related to the level of democracy, the effective number of parties, or the type of electoral system. Second, there is little evidence to suggest that elaborate and costly ballots reduce spoilt ballot rates or are essential tools for illiterate voters. Rather, the negative correlation between ballot design and spoilt ballots, combined with the weight of historical evidence which shows that ballots are often a highly manipulative tools of political symbolism, implies that ballot papers symbols, photographs, layout, and color are of *most* interest as political cues (for both literate and illiterate voters).

☆ The title of this article is something of a homage to Charles Seymour and Donald Paige Frary's (1918) wonderful two volume work, How the World Votes: The Story of Democratic Development in Elections upon which some of the historical evidence in this paper is drawn. Copies of the ballots used for the analysis are online at: http://www.unc.edu/~asreynol/ballots.html.

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This intuition is confirmed by the results of a vote simulation experiment conducted on 401 students in which ballot design had a pronounced effect on voting behavior.

Keywords: Ballots; Symbols; Elections; Voting; Turnout

1. Introduction

At first glance the design of ballot papers may appear a somewhat arcane and peripheral topic but controversies over ballot design in the US presidential election of 2000 and the California Gubernatorial recall election of 2003 have highlighted the importance of how candidates are presented to voters at the polling booth. When elections are close the design of the ballot can swing results—butterfly ballots in Florida and reams of punch cards in California have highlighted the importance of ballot design in established democracies but ballot effects have been dramatically influencing elections in the developing world for decades. There is a wealth of largely unanalyzed data showing that candidate races and referendums have been shaped by colors, symbols, photographs and ballot lay-out from Africa to Latin America, Eastern Europe to the South Pacific.

It is perhaps remarkable that one of the most important processes operated in some way by almost all of human kind—that of how to elect leaders—has hardly altered in two and a half thousand years of history. Technological innovation in the way voters demonstrate their preferences in the ballot booth, i.e., the design of ballot papers (or other voting methods), was almost non-existent until the turn of the 20th century and the methods brought into practice then largely remained unreconstructed during that century. However, the start of the 21st century is witnessing a new era of ballot design and innovation. To facilitate the act of voting for illiterates, to reduce voting errors, and to increase the amount of information on the ballot, many new democracies (along with some older ones) are experimenting with multi-colored ballots, symbols, and photographs of candidates. These innovations are not merely aesthetic, they can influence voting behavior and election outcomes.

There has been limited research into aspects of voting procedure this century, but the bulk of that research has been concerned with issues such as secrecy (see Bishop, 1891; Brennan and Pettit, 1990; Evans, 1917; Fredman, 1968), types of ballot marking (early American data can be found in Allen (1906)), name ordering (see below), the impact of machine voting (Darcy and Schneider, 1989; Shocket et al., 1992; Nichols and Strizek, 1995), and the effect of registration and voting procedures on turnout (see Haynes, 1898; Rusk and Stucker, 1978; Wolfinger and Rosenstone, 1980). There have also been studies of the effects of ballots that allow for "split-ticket" voting (see Rusk, 1970), but there has been very little research into ballot paper design and the act of voting in itself.[2] This is despite the fact that the use of symbols and color

[2] What has been written in this field has been pioneered by Robert Darcy of Oklahoma State University.

was prevalent in 19th century American elections and that many developing world countries have used symbols on their voting papers for much of the post-war period.

This article begins with an historical overview of the evolution of voting procedures from ancient times to the modern day. After highlighting the most consequential areas of ballot paper design we then describe the results of a survey of 134 paper ballots used over the last 20 years for national legislative and executive elections in 107 countries. There are a number of interesting questions wrapped up in the study of ballot design. First, how are voting methods chosen and is there a partisan and political manipulation inherent in their evolution? Second, are ballot types related to democratic type and length of experience with competitive elections? Third, are elaborately designed ballots more accessible to illiterate or less educated voters and do they reduce voting errors? Fourth, does the design of a ballot paper influence in any way voting behavior and thus the outcome of competitive elections? In this paper we briefly address the second and third questions—assessing where one finds more "elaborate" ballots and whether they appear to reduce voting errors, measured by "spoilt ballots." But our main focus is whether ballot design affects voting behavior. After laying out a theoretical rationale as to why ballot design might affect voting behavior we empirically address the question by reporting the results of a controlled experiment.

Our findings demonstrate that elaborate ballots (which incorporate colors, symbols and photographs) are more likely to be found where literacy is lower and competitive multi party elections are a new phenomenon. But elaborate ballots are not significantly related to the level of democracy, the effective number of parties, or the type of electoral system. Indeed, there is little evidence to suggest that elaborate and costly ballots reduce spoilt ballot rates or are essential tools for illiterate voters. Rather, the negative correlation between ballot design and spoilt ballots, combined with the weight of historical evidence which shows that ballots are often a highly manipulative tools of political symbolism, implies that ballot papers symbols, photographs, layout, and color are of *most* interest as political cues (for both literate and illiterate voters). The way a party/candidate/issue is presented—at the very "point of sale"—can have a substantial impact on voting behavior and subsequent candidate/party success. By linking ballot design to cognitive theories of response behavior we hope to produce new insights into one of electoral democracy's most important institutions—the ballot.

2. A short history of voting

For two and a half thousand years voting was conducted largely by a show of hands or by voice approbation (viva voce). This was the dominant method used for elections all the way through those held in Athens in 500 B.C. to Prussian, British and American elections in the mid to late 19th century. The Church was largely responsible for the introduction of the written, and in some cases secret, ballot in the

middle ages. Beginning in 1562, popes were elected by a two-round written ballot of the cardinals present. Romans would gather in the Vatican's square to look for wisps of smoke from the burning of ballots from the first round, which would tell them how the vote was progressing. Nearly 500 years on, as recently seen with the election of Pope Benedict XVI, the practice has been ceremonially formalized into the releasing of white smoke to signify the election of a new Pope.

In the 19th century, voice votes, the showing of hands, or lining up behind the candidate of choice, were methods open to intimidation, bribery and corruption, and for these reasons the British colony of South Australia introduced a secret, pre-printed single ballot paper in 1856 (Katz, 1997). Secret voting of this sort became known as the "Australian Ballot" and was adopted in nearly all constituencies in Britain under the 1872 ballot act. Sixteen years later in 1888 Massachusetts became the first American state to adopt the "Australian ballot" for all statewide elections (Seymour and Frary, 1918).

Over two millenniums three main methods of secret voting developed. First, there is the mark on a single ballot paper which is then deposited by a voter into a single box. Second, there are preprinted party or candidate ballots (or some other method of identification such as a colored disc), which are placed into a single ballot box. Third, some countries use uniform ballots, marbles, or rods, which are placed into individual candidate boxes.

2.1. Single ballot, single box

Before printed ballot papers, the most common form of the secret ballot was to simply write down the name of a chosen candidate, fold it, and then place it in the box. In Syracuse of ancient Greece voting was by *petalism* where candidates' names would be written on olive leaves (*Encyclopedia Britannica* 1911, Vol. III, p. 249). In the time of Pericles, votes to ostracize would be taken by scratching the name of the proposed victim on a broken piece of pottery (Katz, 1997). The first reported use of a secret ballot in the Americas was to elect the pastor of the Salem Church, Massachusetts, on July 20, 1629. At the other end of simplicity is the single mark that the Belgian elector has been asked to make for well over a century. Here the voter merely blackens the white "bull's eye" next to the party, or candidate, of their choice (Seymour and Frary, 1918). The vast majority of ballots analysed for this paper (85%) ask the voter to make an X, tick, line, or thumbprint by the candidate(s)/party of choice.

2.2. Multiple party/candidate ballots, single box

The chief voting characteristic of Francophone countries is that they use a system where voters deposit a pre-printed party or candidate ballot in the ballot box—usually no mark is made on the pre-printed ballot. Oftentimes this system is accompanied by the use of envelopes for the ballots placed in the box. While multiple candidate/party

ballot systems are associated with Franco-phone countries they are also used in Scandinavia, Spain, Greece, Latin America and Malawi, and were in widespread use in Europe (e.g., Bulgaria, Romania and Germany) and the United States before the First World War. The multiple ballot system originated in ancient Rome where under the *Lex Gabiana* of 139 B.C. voters would be given a series of carved wooden ballots for each candidate and then drop their chosen one into an urn (Seymour and Frary, 1918).

2.3. Uniform ballot, separate candidate boxes

The final method of voting is most faithful to the literal meaning of the term *ballot* which comes from the Italian diminutive of *ballotta* (ball). Here uniform papers (or balls or marbles or rods) are placed by the voter in separate and individual candidate ballot boxes. The box with the most ballots wins. This method—which is now effectively extinct—was used widely in colonial India, Pakistan, Anglophone West Africa, western Nigeria, Uganda, Kenya, British Guiana, Zanzibar and the Sudan in the mid part of the twentieth century. The most remarkable use of the single ballot-multiple box system occurred in Hungary from 1848 until 1874. Here each candidate had a large box in his colors which displayed his name. Upon entering the polling station the voter was given a rod of 4–6 feet in length (to avoid the smuggling in of non-official rods) which they then placed in the candidate box of their choice (Seymour and Frary, 1918).

The use of balls and multiple boxes was also a characteristic of voting schemes which allowed for both a positive and negative vote. In ancient Athens the dicasts used balls of stone or metal. Those pierced or black in color signified condemnation, those unpierced or white signaled acquittal—a brass box received the votes and a wooden box the discarded balls (*Encyclopedia Britannica* 1911). In Massachusetts after 1643 assistant legislators were elected by the casting of Indian beans or corn—white for the candidate, black against (Seymour and Frary, 1918). Chinese village elections retain the option of a negative vote today—a circle in the candidate's box indicates a positive vote, an X is a negative. Problems arranging a secret vote with separate candidate ballot boxes and the difficulty of using such a system when more than one vote needed to be cast meant that the *uniform ballot, separate candidate boxes* system was phased out from its last vestiges in Anglophone Africa before most nations became independent in the 1960s.

The first two types remain in use today (in our database, shown in Appendix B, 89 countries use single ballot systems, 15 use multiple party/candidate ballot methods, three countries operate both methods for different elections). Single ballots with single boxes predominate, partly because all other schemes had a high propensity for corruption and intimidation. Proposals for rectifying these flawed methods of illiterate voting increasingly focused on how to make the ballot papers themselves more "friendly" to illiterate voters and in the second half of the twentieth century this entailed increased information on the ballot. Such as the incorporation of party colors, symbols, and photographs along with the broader

issue of the lay-out of the ballot. It is the consequences of these innovations to which we now turn.

3. The political consequences of ballot paper design

3.1. Layout and name ordering

The range of literature which directly deals with ballot paper design effects is limited but there are a number of potentially useful texts which address related subjects and provide insights into the probable motivations for symbol/color choice, their possible effects on voter behavior and the psychology of politics and symbolism. The closest related ballot design issue, which gives us some idea about the potential influence of symbols on ballot papers, concerns name ordering or "alphabetic voting." It is reasonable to hypothesize that if the order of candidate name appearance on a ballot paper influences voting behavior, then the much more politically charged practice of using logos, colors and photographs is likely to have an even greater influence.

A number of studies have noted the impact of alphabetic voting, i.e., there is an advantage in being at the top of a ballot paper as opposed to the bottom (Bakker and Lijphart, 1980; Darcy, 1986; Kelley and McAllister, 1984; Lijphart and Lopez-Pintor, 1988; but see Darcy, 1998), and that the effects are strongest when voters are less knowledgeable about politics and there is less descriptive information on the ballot (Miller and Krosnick, 1998). This is due to the occurrence of "donkey voting" where an elector will either list the candidates (1 through n) from top to bottom on a ballot paper in a preferential system of voting, or simply place an X by the top candidate in a non-preferential system. Of the ballots surveyed for this paper 38 listed candidates or parties alphabetically, 65 listed them randomly or by a non-alphabetical method, 24 ballots print the party's ordered list of candidates. Austria, Brazil, the Netherlands and Venezuela list parties by their performance in the previous election, South Africa holds a lot to see which party will be at the top of the ballot and then lists parties alphabetically.[3] Tasmania and many American states rotate the order and print different versions of the ballot to ensure no single candidate benefits from alphabetical voting (Darcy and Mackerras, 1993).

Beyond name ordering there are a number of interesting cases which illustrate the importance of the way the ballot is constructed. In Mozambique in 1994 the parties were randomly listed from top to bottom but there were separate draws for the Presidential and Parliamentary ballot. On the presidential ballot the eventual winner, Joaquim Alberto Chissano of the Frente de Libertação de Moçambique (FRELIMO), was listed third and FRELIMO used much of their publicity to urge voters to vote for the third party from the top. But in the parliamentary ballot a previously unknown party, the União Democrático (UD) was listed in third place.

[3] Interestingly in 1994 the Pan Africanist Congress of Azania (PAC) won the lot to be the first party listed on the ballot—they polled 1.25% of the popular vote. In 1999 the PAC were hidden in the middle of the ballot and they polled 0.71%.

To the great surprise of all observers the UD were the only party outside of the two main movements FRELIMO and the Resistência Nacional Moçambique (RENAMO) to surmount the 5% threshold (they polled 5.1%) and win seats in the national assembly (Wood and Haines, 1998). In the second elections of 1999 the ballot paper confusion was removed and the UD lost all their seats by polling only 1.5% of the vote.[4]

3.2. Symbols

For a number of decades, party and candidate symbols have been used to aid voting in Africa, Asia and the Caribbean.[5] Today over 50 countries print party logos on the ballot and a dozen others use everyday objects as symbols to represent individual candidates. In some states the choice and allocation of ballot paper symbols has been highly politically charged and the process exposed to a significant level of abuse. In Zimbabwe President Mugabe unilaterally declared the cockerel, his party's symbol, prohibited for use by opposition parties (Moyo, 1992).

Tanzania offers the best evidence on the impact of seemingly neutral candidate symbols in elections. In 1965 two candidates from the ruling Tanzanian African National Union (TANU) party ran in each of the 111 constituencies. One candidate was allotted the symbol of a hoe (*kjembe* in Swahili) and the other a picture of a house (*nyumba*). Molnos (1967) found that there was clear evidence that the symbol allocation affected voting behavior. The National Executive Committee (NEC) of TANU ranked the candidates from each constituency and then alternated allocation of the *hoe* and *house* symbols between top ranked candidates as they went down an alphabetical list of constituencies. The only exception to this rule was that the symbols were to be evenly distributed between government ministers.

The *hoe* and *house* symbols were supposed to be neutral and simply represent each candidate "not by exact resemblance (but by an) accidental and conventional relation", i.e., they were to have no meaning in themselves rather they were to merely denote, for a temporary period, one candidate or another. However, in a society orientated around subsistence farming, the *hoe* was a powerful symbol of practical everyday life. The vast majority of Tanzanians were farmers who relied on their *hoe* for a living and would only lend it to a close friend. In the Bukoba region the people of the Haya had a proverb "Enfuka efuka" which stated that "the *hoe* is father of everything." The *hoe* became a more overt symbol of wealth in some regions as they were used as a form of currency for bartering and as an essential part of a dowry—the going rate was approximately six *hoes* for a wife. Furthermore, in the early post-colonial period the *hoe* became closely associated with the President Julius Nyerere and the founding of the new state (Jellicoe, 1967). In contrast the other

[4] We are indebted to Horacio Boneo for both the Nicaraguan and Mozambican stories.

[5] In the US, some counties in some states continue to use symbols on the ballot. Predominantly Democrats are represented by a donkey and the Republicans by an elephant but in some states the Democrats are represented by a rooster or the Statue of Liberty. In Oklahoma, the Republicans use an eagle.

symbol, the *house,* was a Western style rectangular house with four walls, a tiled sloping roof and windows. This was widely seen as a foreign modern house, unsuitable for local conditions and viewed as a superfluous luxury beyond the means of most Tanzanians.

Molnos's (1967) survey found that in Dar es Salaam over 50% of respondents could name their representative in the National Assembly (which compared with a 15% equivalent level of recognition in the United States at that time). But remarkably 93% of voters could name the symbol used by the winning candidate and when illiterates were taken as a separate polling group the symbol recognition factor still reached 75%.[6] Candidates in the 1965 election sought to play up their symbol association in agricultural areas if they had the *hoe* and try and play down its significance if they were allotted the *house*. In 1965, *hoe* candidates won 53% of the time.

Three more elections followed between 1970 and 1980, all using the same *hoe* and *house* symbols and displaying increasing success from those candidates allotted the *hoe* symbol. In 1970, the *hoe* candidates won 62% of the time, in 1975 74% of the time and this was not related to incumbency. By the 1980 election the public began to believe that the *hoe* symbol was being deliberately allotted to candidates who were favored by the TANU NEC. In 1980, all cabinet ministers (with the exception of one) were given the *hoe* symbol and none were defeated (Bavu, 1989). The evidence of symbol bias became so great that the government was forced to drop the *hoe* and *house* symbols and move to a ballot paper which showed a photograph alongside the names of the candidates.

3.3. Photographs, color and supplementary information

In developing world elections countries are increasingly using photographs on their ballot papers, often as a supplement to party symbols, in order to make it absolutely clear to whom the vote is going. Over thirty countries in our database allow for the use of candidate photographs and it is particularly prevalent for the presidential ballot papers analyzed—22 out of 32. Photos on ballots are predominantly found in Africa and Latin American countries but exist also in Cyprus, Papua New Guinea, Haiti and since 2001 the Republic of Ireland. Papua New Guinea offers the most elaborate photographic clues on their ballot paper. Since 1987, candidate photographs have appeared on the ballot and if the candidate is endorsed by a party the party leader's face appears alongside the candidate. The double photo system was introduced to strengthen an exceptionally weak party system but to date it has not succeeded in dramatically reducing party fragmentation.

Beyond symbols and photographs there are a number of other items which may be included in ballot papers to provide further cues to influence voting behavior. Chief among these is color which has long been used to denote party tickets. In 19th

[6] Molnos (1967, p. 426).

century America parties used colors to differentiate the pre-printed party ballots—the Republicans used a flaming pink border with rays projecting toward the center (a design unlikely to be used today; Seymour and Frary, 1918). Forty-one of the 133 papers categorized in Appendix B are printed in full (or multi) color and many of the other ballots in black with one other color.

Psychological experiments have found that different colors can influence reactions (Wilson, 1966); responses are conditioned by gender (Swaringen et al., 1978) and by culture (Choungourian, 1968). Rubinoff and Marsh (1980) conducted an experiment to test for the impact of color on ballots and found that the color presentation of candidates effected perceptions of the candidate's attributes. Garrett and Brooks (1987) studied the influence of ballot color on sex of candidate and sex of voter and found that male voters had a bias for candidates on green paper while female voters preferred candidates on pink paper.

4. The political psychology of ballot design

We believe that the impact of ballot design on voting behavior is best understood from a psychological perspective. We are interested in testing two propositions: (i) elaborate ballots reduce spoilt votes by making it easier for illiterate citizens to cast their vote and (ii) the use of political symbolism on ballots affects vote choice by presenting "voting cues." Both of these propositions are related to theories about heuristic information-processing, although they approach the concept of a heuristic in different ways.

Heuristics have a long history in psychology. Polya(1945) introduced this term in the context of mathematical reasoning, as a device that facilitates finding solutions to complex problems. Subsequently, behavioral decision theorists discussed heuristics as shortcuts to decision problems, as instruments that can help decision makers reach decisions in a reasonable amount of time (e.g. Tversky and Kahneman, 1974). Political scientists have embraced this conception of heuristics, since it offers an understanding of the political behavior of citizens who may either lack the motivation or the cognitive wherewithal to process information in a systematic manner (see Lau and Redlawsk, 2001; Lupia, 1994; McDermott, 1997, 1998; Popkin, 1991; Sniderman et al., 1991). From these perspectives, the use of colors and symbols on ballots may facilitate the act of voting. This should be the case, in particular, for illiterate citizens who may have formed clear preferences in an election but who would have a difficult time mapping those preferences onto a ballot without the aid of symbols. Symbols become the shortcuts whereby illiterates can cast their votes. If this is true, then we should expect to see that spoilage of ballots is less common in those societies that employ colors and symbols on their ballots, especially when illiteracy in those societies is high.

Psychologists typically point out that, while heuristics can be useful shortcuts, they may also introduce biases that can actually produce irrational decisions (see Tversky and Kahneman, 1974). Political scientists have generally been more

optimistic about heuristics (but see Kuklinski and Hurley, 1994; Lau and Redlawsk, 2001), although there is actually plenty of research in political psychology that suggests the potential for bias. We can divide this research into several streams: political symbolism, cue taking, framing, persuasion, and response behavior.

The literature on political symbolism is quite clear in its assessment that symbols are not used in a neutral manner but serve political functions (Elder and Cobb, 1983; Campbell and Rollins, 1989; Burke, 1989; Ginzburg, 1990). Thus symbols on a ballot may do much more than help illiterate citizens map their preferences onto a ballot. Because they are not neutral and can be manipulated, symbols may actually influence the preferences themselves. Popkin (1991) is aware of this and admits that symbols do not always influence voters to act in ways which we might predict. He notes

> […] just as our party identification can remind us what to do when we have no other information, our symbols and principles orient us when we have no other information. The inconsistencies that exist between the general and the particular are what makes campaigns and the choice of symbols so important (p. 63).

At their most powerful symbols can "re-create our memories, literally 'inventing' our history" (p. 111). An example of this can be found in the Russia's Choice party, which contested the December 1993 Russian parliamentary elections. Many of the party's leaders where former officials of the Communist Party, but this may have escaped many Russians since the party logo was not the hammer and sickle but rather a dramatic representation of Peter the Great on horseback.

Importantly, much of the effect of symbols may be automatic. Voters may be completely unaware that they are acting on the basis of a symbol, since the processing of symbolic information may take place below the radar of conscious awareness. As psychologists have shown, such automatic responses may be difficult to control precisely because we are not aware of them (see Bargh, 1999).

The cue-taking literature also suggests that symbols can affect preferences. While Lupia (1994) has demonstrated that voting cues allow uninformed voters to emulate the behavior of relatively well-informed voters, it is also clear that different cues may trigger different responses from the same individual. For example, we know that race and gender can be powerful cues (McDermott, 1997), but they may cause individuals to behave in different ways. A particular voter may respond to a candidate's gender when nothing is known about that candidate's race, but once cues about race are introduced gender may lose its heuristic value. Since symbols can trigger different cues, whoever is in charge of constructing the ballots has quite a bit of leeway in manipulating which cues voters will act on. In this context, it is useful to note the particular importance of symbols that can cue identities. The importance of identities is well known in psychology (see Huddy, 2003) and the ability to cue such identities through ballot design may have a profound effect on elections, as we shall demonstrate below.

The framing literature, too, points to the importance of symbols and other ballot design elements. Frames are rhetorical and stylistic devices that draw attention to

certain aspects of an issue while obscuring other aspects (e.g. Entman, 1993). Symbols can act as a frame and as such frame the central issues of the election. For example, Tanzanians faced with the symbol of a western looking house representing one of the parties on the ballot might have interpreted this as an indicator that the party in question wanted westernization of their society. This, in turn, might have altered the manner in which they cast their vote.

The persuasion literature further speaks to such changes in behavior. In one of the most influential models of persuasion, the elaboration likelihood model (or ELM), Petty and Cacioppo (1986) distinguish between central and peripheral routes of communication. The central route depends on processing and elaboration of the arguments of a persuasive communication. By contrast, the peripheral route persuades through peripheral cues such as symbols that are not processed systematically but can nonetheless direct attitudes, at least in the short run. Since central route processing is effortful and requires considerable cognitive resources, it has often been assumed that much persuasion occurs through the peripheral route. While ballots generally are not intended to be persuasive messages, they may produce (perhaps unintended) persuasive effects because symbols are a prime example of peripheral cues. Since the effect is immediate—symbols influence the vote choice right in the polling place—it does not matter that it is usually short-lived.

Finally, we can point to the literature on survey response behavior to understand the importance of ballot design for voting behavior. Many of the models of the survey response are memory-based, in the sense that they postulate that survey respondents do not have an established opinion that they can report in a survey or at the polling place, but rather have a set of competing consideration in memory. Zaller and Feldman (1992) found that respondents answer survey questions by sampling from this set of competing considerations (the "ambivalence axiom"). How they sample, i.e. which considerations are favored, depends on the cues embedded in the survey questions (the "response axiom"). Thus, slight changes in question wording could have a dramatic effect on molding survey responses. Ballot paper design—symbols, photographs, colors—are a form of "response molding" applied directly at the point of sale when it comes to voting preferences. Symbols can prime different preferences and considerations, thus influencing the vote that is being cast.

The upshot of these different theories is that ballot design may do a lot more than helping illiterate citizens cast their vote. It may actually influence the vote that is being cast by influencing how the voter interprets the choices that are in front of him/her, by influencing which considerations matter, and through subtle persuasion of which the voter may remain blissfully unaware. Thus, it might well be the case that the election results from an election with black-and-white ballots differ from the results of the same election being conducted using elaborate ballots. To be sure, the spoilage rate in the latter election may be lower but it may also be that the winners and losers from the election are different. Not everyone will be subject to the effects of symbolic manipulation. Some voters have fixed preferences or see through the manipulation of symbols on the ballot. But many are to some extent still undecided as they enter the polling place or may lack awareness of the symbolic manipulation

of the ballot. We suspect that many of those individuals are illiterate or less educated citizens and for them ballot design can have a tremendous effect on the way they cast their votes.

5. Results

5.1. Determinants of ballot design

Appendix A illustrates that today the inclusion of symbols, color, and photographs on ballots are a predominant characteristic of Latin American countries while party and candidates' symbols are found in the former British colonies of Asia and the Caribbean and European nations which have a Mediterranean coastline. To obtain a better sense of the characteristics of countries that have elaborate ballot designs we conducted an ordered logit analysis of a measure of ballot elaborateness. This measure is a count of whether the ballot incorporates symbols, color, or photographs. It takes on a value of 0 if the ballot paper incorporates none of these elements and a value of 3 if it incorporates all three. We predict ballot elaborateness as a function of literacy, human development, population size, level of democracy, number of elections to date, and effective number of political parties. We also include dummy variables for South America, where elaborate ballots are unusually common, and presidential elections. The results in Table 1 reveal that ballot elaborateness does not depend much on political variables. The level of democracy, number of elections, and effective number of political parties do not increase the likelihood of more elaborate ballot designs. Human development and population size are also unrelated to ballot elaborateness. Elaborateness does depend on literacy, with countries with lower literacy rates being more likely to adopt elaborate ballot designs. There also is a greater likelihood of finding elaborate ballots in South American than elsewhere in the world. We also observe a marginally significant positive effect of presidential elections on elaborateness.[7]

5.2. Elaborate ballots and spoilt votes

Do elaborate ballot designs decrease ballot spoilage, as one would predict if such designs have a heuristic value? To answer this question, we run an OLS regression analysis of the percentage of spoilt ballots in an election using elaborateness and literacy as the key predictors. We also include an interaction between these predictors, since elaborateness should matter the most when literacy rates are low.

[7] These effects are substantively important. Holding all other predictors at the mean, the predicted likelihood of having no special design elements increases from 0.046 at the lowest level of literacy to 0.382 at the highest level. Similarly, the predicted likelihood of not having special design elements is 0.292 points lower in South American than elsewhere in the world, again holding all other predictors at their mean. Less impressive is the effect of presidential elections: the predicted likelihood of zero elaborateness is 0.099 points lower in presidential elections than in other types of elections.

Table 1
Explaining the use of elaborate ballot designs

	Coefficient	Standard error
Literacy	−0.036**	0.014
Human development index	−1.913	1.775
Population size	−0.000	0.002
Freedom House democracy score	−0.075	0.078
Effective number of political parties	−0.070	0.055
Number of elections to date	−0.032	0.047
South America	2.825**	0.700
Presidential election	0.696+	0.366
Ancillary parameters:		
1st cut point	−5.711	1.097
2nd cut point	−3.471	1.027
3rd cut point	−1.543	1.021

$N=117$. Pseudo R^2: 0.20. Table entries are maximum likelihood ordered logit estimates with cluster-corrected estimated standard errors in parentheses (clustering was on case, since some cases were represented multiple times because both legislative and presidential elections had been coded). $+p < 0.10$, $^{**}p < 0.01$ (two-tailed).

The analysis controls for the electoral system (a continuum of proportionality), Latin America (where spoilage rates are comparatively high), and compulsory voting.

The results, which are presented in Table 2, run counter to our expectations. Specifically, a heuristic model would suggest that ballot elaborateness should reduce ballot spoilage precisely in those countries where literacy is low. However, the interaction between literacy and elaborateness is negative, suggesting that the effect on spoilage is found in countries with relatively high literacy rates and not in countries where literacy is low. Reconstruction of the simple slopes for elaborateness can illustrate this. In countries of average literacy (i.e. literacy rates of around

Table 2
Explaining spoilt ballots

	Coefficient	Standard error
Elaborate	−0.242	0.505
Literacy	−0.083**	0.022
Elaborate × literacy	−0.074**	0.023
Electoral System	−0.336*	0.129
Compulsory	6.399**	2.020
South America	4.211**	1.598
Constant	2.648**	0.573

$N=117$. Adjusted R^2: 0.34. Table entries are OLS regression estimates with cluster-corrected estimated standard errors in parentheses (clustering was on case, since some cases were represented multiple times because both legislative and presidential elections had been coded). We centered elaborate and literacy before interacting and entering them into the model. $^{*}p < 0.05$, $^{**}p < 0.01$ (two-tailed).

78.1%), the simple effect of elaborateness is −0.242 (not significant). In countries where literacy is one standard deviation above the mean (i.e. literacy rates of around 100%), the simple slope is −1.947 ($p < 0.01$), which indicates that elaborateness helps reduce ballot spoilage when literacy is high. By contrast, countries where literacy is one standard deviation below the mean (i.e. literacy rates of around 55%) show a positive effect of elaborateness ($b = 1.463$, $p < 0.10$). Thus, if anything, elaborate ballots seem to have a counter-productive effect on ballot spoilage in countries with high levels of illiteracy.

The lack of a more substantive correlation suggests that the incorporation of symbols, photos and color does little to affect the number of ballots which are marked improperly. The fact that the South American dummy shows up so strongly—and there is a well developed literature that points to the exceptionally high spoilt rates on that continent as indicators of political alienation—suggests that spoilt ballots have much more to do with protest than error (Powers and Roberts, 1995).

5.3. The impact of ballot design on voting behavior: a controlled experiment

To test the impact of ballot design on voting behavior we conducted a controlled experiment. The experiment simulates an election in a hypothetical country manipulating the ballot design along two dimensions—the use of color and the use of symbols. The design allows us to explore the impact of these dimensions on voting behavior in different types of elections.

5.3.1. Sample

Through April–October 2002, 401 undergraduate students at two major universities participated in the ballot experiment. The students were recruited from an introductory course on American government and received credit for their participation. They participated in a 35 min session in which they privately read a script (Appendix C), voted in three separate elections (presidential, parliamentary, and a referendum), and filled out a short questionnaire about themselves. About 63% of the participants were females and about 77% were white (with 12% African-American, 3.5% Asian-American, and 3% Hispanics).

5.3.2. Procedure

To control for existing political preferences we invented a nation, its history and geography, two ethnicities, and two political parties. The island nation of Kamuzu is a plantation society divided between Blues and Pinks who are also to some degree separated by geography and income (see Appendix C). Blues are the dominant group on the mainland but Pinks are in the majority on the offshore island of Babu. There are two political parties. The Kamuzu People's Party (KPP) predominantly draws its support from wealthy Kamuzians and those on the mainland (both codes for Blues). It has won every election since independence. It believes in (a) a capitalistic free market

economy and (b) opposes the secession of the island of Babu from the mainland. The Babu Front (BF) predominantly draws its support from the inhabitants of Babu island (a code for Pinks). It has lost every election since independence. It believes in (a) a socialistic state run economy with subsidies for the poor working class and (b) independence for the island of Babu.

The participants were randomly assigned an ethnicity (Blue or Pink), an economic status (wealthy or poor), and a location (mainland or the island of Babu). By manipulating ethnicity we hoped to establish distinctive identities, following in the footsteps of the "minimal group paradigm" (Tajfel et al., 1971). By manipulating economic status and location we hoped to create countervailing pressures, which would make voting a more complex function of the participants' characteristics.

We presented the participants with three ballots for three different elections—Presidential, Parliamentary, and a referendum. In the Presidential election, voters were asked to place an "X" by the candidate of their choice (either from the KPP or the BF). In the Parliamentary election, they had three votes, which could be cast for six different candidates (three from the KPP and three from the BF). The referendum was posed: "Do you believe the island of Babu should become independent?—Yes or No?" The ballot design was systematically manipulated. The participants were randomly assigned to either all black and white ballots, all colored ballots, or color ballots with symbols. Thus, our experiment is a 2 (ethnicity) $\times$ 2 (economic status) $\times$ 2 (location) $\times$ 3 (ballot design) factorial design, in which the participants were randomly assigned to one of the twenty-four conditions.[8]

Our aim was to engender ethnic block voting but assign some of the participants with cross cutting characteristics which could give them a reason to defect from their ethnic party (the KPP for Blues and the BF for Pinks). These involved economic and geographic traits, which we hypothesize would effect the Presidential/Parliamentary and referendum votes respectively. The color and color/symbol ballots clearly reinforced and made salient the participants' ethnicity on the ballot paper. On the referendum ballot we went further and attempted to design the symbols representing independence for the island of Babu and retention of the national state in a way that would make a YES vote less appealing than a NO vote. Voting "yes" to independence was represented by a shattered map of the islands with a large red X through the center. Voting "no," against independence for Babu, was represented by a less jarring and warmer blue encircling both land masses in a show of togetherness.

We should make on final point about the experimental design. One may wonder how much the design can tell us about the real world. Obviously, the supply of

[8] While we took great care in spreading participants evenly across the three types of ballots, we did not get a perfectly balanced design (in part because of missing values). However, this does not seem to have produced obvious biases: across the three ballot designs, participants looked similar in terms of gender, race, political interest, attention to politics, and manipulated attributes (race, status, and locale).

information was relatively low in this election and one might also object that our participants did not have real stakes in the election outcome. However, in other ways our design resembles the real world nicely. As discussed earlier, the use of colors and symbols frequently taps into voters' identities, and our design matched this feature. Still, we admit that there are limitations to the generalizability of our results. The goal of the experiment was not to describe the real world of elections—we do that elsewhere in this paper—but rather to create a situation in which ballot effects can be observed without obvious confounds, as well as a situation that is most likely to give rise to such effects. In other words, we wanted to demonstrate that ballot design can matter under the right circumstances, not that it always does or even does for a majority of elections and countries.

5.3.3. Hypotheses

Our hypotheses were as follows.

1. Blues are likely to vote KPP and Pinks are likely to vote BF in the Presidential elections. Given cross-cutting pressures, the most likely defectors should be poor Blues and wealthy Pinks. The likelihood of defection should be decreased if ethnic identities are made salient via the color and color/symbol ballot designs.
2. Wealthy Blues and poor Pinks are most likely to vote straight party tickets in the Parliamentary election (since economic status and ethnicity are mutually reinforcing). They are even *more* likely to vote a straight party ticket if their ethnicity is made salient via the color and color/symbol ballot designs.
3. Blues are likely to vote against Babu's secession and Pinks in favor. This is even more likely if their ethnicity is made salient via the use of colors on the ballot. However, the use of symbols may depress pro-independence votes among Pinks.

We should emphasize that we did not expect to find massive effects from ballot design. As noted earlier, our experiment follows in the tradition of the "minimal group paradigm" of Tajfel et al. (1971). That is, the ethnic identities that we created were based on fairly arbitrary and ephemeral distinctions: participants were randomly assigned to an identity, acquiring it for the relatively short duration of the experiment. While Tajfel has demonstrated that minimal groups can create distinct social identities, which influence behavior toward ingroups and outgroups, we should not expect these effects to be overwhelming, especially considering the fact that many participants were given cross cutting characteristics. Thus, reinforcement of the ethnic identities via ballot design should have an impact only at the margins, although this effect should be clearly perceptible. Nevertheless, we expect that the impact of ballot design in real world elections is similarly marginal, so in this regard our experiment was designed so as to mimic the real world.

Table 3
Defection in the presidential vote

Predictor	Black and white	Color
Pink	−0.777 (0.517)	−0.601 (0.426)
Wealthy	−1.779** (0.599)	−2.225** (0.567)
Pink × wealthy	3.876** (0.823)	3.354** (0.696)
Constant	−0.167 (0.410)	−0.619+ (0.331)
−2 × log likelihood	156.123	236.229
Pseudo R^2	0.274	0.204
N	147	254

Table entries are maximum likelihood logit estimates with estimated standard errors in parentheses. $^{**}p < 0.01$, $+p < 0.10$ (two-tailed).

5.3.4. Results

Our results generally support the hypotheses. Let us first turn to Hypothesis 1 concerning our participants' voting behavior in the Presidential elections. Table 3 shows the logit results of the impact of the identities on defection in these elections (coded 1 if a participant voted against the Presidential candidate that she should have voted for given her identity). In this analysis we have included two dummy variables: Pink is scored 1 and 0 for a Pink and Blue identity, respectively, while wealthy was scored 1 and 0 for a wealthy and poor identity respectively. We also include the interaction between these two variables. The results show a significant negative main effect of wealthy and a significant positive interaction, regardless of the color of the ballot. This is as we expected as per Hypothesis 1.[9]

To show the results more clearly, it is useful to compute the predicted probabilities of defection for the different identity groups as is done in Table 4. This table clearly shows that the two groups most likely to defect are poor Blues and wealthy Pinks, which is consistent with our first hypothesis. The results also show, however, that ballot color moderates the likelihood of defection.[10] In all groups, defection is most likely when the ballot is in black and white. Indeed, in this case the predicted modal response for wealthy Pinks would be defection. Providing a color ballot reduces the inclination to defect, as one would expect

[9] We also ran analyses including predictors for the demographic characteristics of the participants. This did not alter the results, as one should expect given the randomized nature of the experiment. We repeated this same setup for the other analyses in this paper. In none of these analyses did the inclusion of demographic variables significantly alter the results for the experimental variables. Thus, for the sake of simplicity, the tables show the models that include the experimental manipulations only.

[10] The analyses of the Presidential and Parliamentary elections break down the sample only by ballot color. The distinction between color ballots with and without symbols is not relevant for these elections, since the symbolism refers only to the Referendum vote on secession of the island of Babu.

Table 4
Predicted probabilities of defection in presidential elections

Configuration	Black and white	Color
Poor Blue	0.458	0.350
Wealthy Blue	0.125	0.055
Poor Pink	0.280	0.228
Wealthy Pink	0.760	0.477

given that the color is expected to reinforce one's color-based identity. While defection rates for color ballots are lower than those for black and white ballots across the board, the change in defection is particularly noticeable among poor Blues and wealthy Pinks. Participants in these groups clearly experienced cross-pressures in their preferences due to the opposite effects of color and wealth. These pressures seem to have been reduced, with the balance moving in favor of color, when a color ballot was provided and a color-based identity was emphasized.

Let us now turn to Hypothesis 2, concerning straight-ticket voting in Parliamentary elections. Here our expectation was that wealthy Blues and poor Pinks would be the most likely to vote a straight ticket. The logit results in Table 5 show considerable support for this hypothesis. Here the dependent variable was coded 1 if a participant voted a straight ticket, i.e., vote for all KPP or all BF Parliamentary candidates. The predictors are the same as in our analysis of Presidential voting. We observe significant positive main effects from Pink and wealthy and a negative interaction, regardless of the color of the ballot. This is consistent with Hypothesis 2.

To bring these findings into greater relief we again computed the predicted probabilities for different combinations of wealth and color-based identity. These predictions are shown in Table 6. This table clearly shows that wealthy Blues and poor Pinks indeed have the highest straight-ticket voting probabilities. However,

Table 5
Straight ticket voting in parliamentary election

Predictor	Black and white	Color
Pink	2.314** (0.793)	2.119** (0.499)
Wealthy	2.231** (0.793)	1.624** (0.490)
Pink × wealthy	−3.806** (1.005)	−3.107** (0.643)
Constant	−2.398** (0.739)	−1.734** (0.443)
−2 × log likelihood	168.419	315.832
Pseudo R^2	0.174	0.150
N	145	254

Table entries are maximum likelihood logit estimates with estimated standard errors in parentheses. **$p < 0.01$ (two-tailed).

Table 6
Predicted probabilities of straight ticket voting in parliamentary elections

Configuration	Black and white	Color
Poor Blue	0.083	0.150
Wealthy Blue	0.458	0.473
Poor Pink	0.479	0.595
Wealthy Pink	0.160	0.250

there is also a demonstrable ballot effect. Straight-ticket voting becomes more likely when a color ballot is used. This is true in all experimental groups, but the effect is particularly striking for poor Pinks. The predicted modal response is a straight ticket vote if the ballot is in color, which means that it reinforces the color-based identity.

Finally, let us consider voting behavior in the Referendum. Here we look at voting for secession of the island of Babu (a pro-secession vote is coded as 1). Per Hypothesis 3 we expect Pinks to be more supportive of secession than Blues and hence our logit model includes Pink as the single predictor (with the constant capturing Blues). Unlike the previous analyses, we now break down the sample into three ballot design groups: black and white, color, and color with symbols. Our expectation is that the differences between Blues and Pinks should be more pronounced in the color ballots without symbols, but that the inclusion of symbols should makes these differences less pronounced. The results in Table 7 support this hypothesis. As expected, Pink has a significant positive effect on the probability of voting for secession. But the effect is the greatest for color ballots without symbols.

An analysis of the predicted probabilities, shown in Table 8, reveals the pattern more clearly. When the ballots are in black and white, neither Blues nor Pinks are expected to vote for secession and the difference in the predicted probability of voting for secession is only 0.190. However, when the same vote is cast on color ballots without symbols the difference between Blues and Pinks becomes much greater: Pinks are 0.381 more likely to vote for secession than Blues and indeed, the modal predicted vote for Pinks is now in favor of secession.

Table 7
The referendum vote

Predictor	Black and white	Color	Color and symbols
Pink	0.857* (0.358)	1.761** (0.427)	1.137** (0.377)
Constant	−1.099** (0.272)	−1.514** (0.333)	−1.198** (0.285)
$-2 \times$ log likelihood	183.866	135.728	166.168
Pseudo R^2	0.054	0.204	0.094
N	147	118	136

Table entries are maximum likelihood logit estimates with estimated standard errors in parentheses. $^{*}p < 0.05$ $^{**}p < 0.01$ (two-tailed).

Table 8
Predicted probability of a vote for secession

Configuration	Black and white	Color	Color and symbols
Blue	0.250	0.180	0.232
Pink	0.440	0.561	0.485

The inclusion of symbols tempers the differences between Blues and Pinks again, although it does not completely wipe out the effect of color. This is understandable because the symbols were biased against secession. Thus, even while Pinks may have favored the secession of Babu based on their color identity, the negative symbolic implications of secession should have caused some Pinks to become less inclined to vote yes on the Referendum. As a result, the predicted modal category for Pinks is again "no" if they cast the ballots on color paper with symbols (the same modal response that is observed for the black and white ballots).

These results reveal two general patterns. First, our experimental manipulation of identities seems to have worked since all of our hypotheses regarding color-based voting (i.e. the distinction between Blues and Pinks) have received support. Second, ballot design matters at least at the margins. In all three elections, the manipulation of ballot color (and/or symbolism) had the expected effect on voting behavior. This effect was usually not enormous, although for some groups it changed the predicted outcomes. The manipulability of election outcomes based on ballot design can be quite important, especially if election outcomes are close as they frequently are. Apparently, the use of relevant colors and symbols triggers certain identities and cognitions, which then become more important in voting behavior than they would have been otherwise. In some cases this effect may be so powerful that election results could tip.

6. Conclusion

There is scant evidence to suggest that elaborate ballots have a great impact on the ease of voting but plenty of anecdotal evidence, confirmed by our experiment, that they are politically charged cues to voting behavior. If that is indeed the case psephologists might usefully pay attention to ballot design as a response molding factor which influences vote shares and pay attention to who actually designs the ballot in the first place. The choice of party political symbols for ballot papers will be increasingly important as developing world countries move to multi-party democratic electoral systems. A symbol may be most electorally attractive if it contains some, or all, of these properties: (i) it carries a high recognition factor among the society as a whole; (ii) it is easily communicable and is rooted in some political or cultural tradition which is at the very least neutral in the eyes of the electorate; (iii) it is attractive enough to win votes if other political considerations were removed; (iv) it is not a "culturally insensitive" symbol which would actually

lose the party votes of people whom it would have won if no symbol had been used at all.[11]

The evidence suggests that future innovation in ballot design and modes of voting will also have electoral consequences. Voting by mail is already a fixture in Oregon, Toronto, and for a multitude of non-governmental elections but postal votes may not use different ballots than those given out at a polling station. Telephone voting, as used in Nova Scotia's provincial leadership election in 1992, the Reform party's presidential nomination process, and parts of Toronto, may by-pass entirely the need to present candidates/parties on a sheet of paper. However, the development of computerized/internet voting may dramatically open up the way candidate options can be presented to voters—computers will be able to present candidates in a more extravagant and potentially interactive way. The US Reform Party already allows for email voting and Arizona Democrats tested a system in their presidential primary of 2000. Both California and Minnesota have set up commissions to investigate the viability of internet voting. However, perhaps of more realistic import to the vast majority of new democracies who are light years away from computer voting is the expense of sustaining expensive ballots once the wealthy donor community has left the euphoric scene of the "first" democratic election.

Our findings also have implications for the manner in which voting behavior should be understood. We should note first, that individual-level theories of voting behavior have done little exploration of the impact of ballot design on vote choice, although the 2000 US presidential elections may change this. We believe that our findings warrant further exploration of this matter. It is clear that these findings are inconsistent with any theory that holds that the preferences of all voters are fixed, or else voting would be a simple act of translating those preferences to the appropriate place on the ballot and we should see no systematic effects of ballot design. This is not to say that there may be citizens with strong preferences (as is predicted, for example, by the on-line model; Lodge et al., 1995); clearly not everyone is swayed by symbolic manipulation of ballots and some would vote the same way regardless of the design of the ballot. However, a portion of the electorate seems to respond to such manipulations, as would be predicted by memory-based models of cognition (Zaller and Feldman, 1992). This suggests that we should look for hybrid models of political cognition (Steenbergen and Lodge, 2003) or dual process models (see Chaiken and Trope, 1999) that can accommodate the variation in decision-making that exists among citizens. Such models can help us understand the practice of political manipulation of ballots that is unfortunately still a fact of the democratic life of many countries.

[11] It can be easy to unconsciously choose a symbol with negative cultural connotations. In 1993 the Peace Accord in South Africa presented a symbol which they hoped would promote tolerance in some of the areas of the country worst affected by violence. They came up with the image of a white dove on a blue background which appeared appropriate until the committee discovered that in Zulu culture a single dove flying on its own is considered particularly bad luck and the precursor to troubled times. Thus, hurriedly and at large cost, a second dove joined the logo.

Appendix A. Summary of advanced ballot provisions

	Western Europe	Central and East Europe	North America/ Caribbean	Latin America	Asia	Africa	Oceania
Full (multi) color		Bosnia	Haiti	Argentina, Bolivia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Honduras, Mexico, Nicaragua, Peru, Uruguay, Venezuela	East Timor	Angola, Botswana, Guinea, Guinea-Bissau, Liberia, Malawi, Mali, Mozambique, Nigeria, South Africa, Togo	New Zealand
Photos	Cyprus, Greece, Portugal, Ireland		Haiti	Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Honduras, Nicaragua, Paraguay, Peru, Suriname, Uruguay, Venezuela		Angola, Congo, Guinea, Guinea-Bissau, Liberia, Malawi, Mali, Nigeria, South Africa, Tanzania, Uganda, Zimbabwe	Papua New Guinea
Party symbols	Cyprus, France, Greece, Italy, Malta, Portugal, Spain, Turkey	Hungry, Romania, Slovakia	Bahamas, Haiti, Trinidad and Tobago	Argentina, Bolivia, Chile, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay, Venezuela	Cambodia, Sri Lanka, East Timor	Angola, Botswana, Congo, Guinea, Guinea-Bissau, Kenya, Liberia, Malawi, Morocco, Mozambique, Namibia, Nigeria, Sierra Leone, South Africa, Tanzania, Togo, Zimbabwe	New Zealand, Fiji
Candidate symbols			Grenada, St. Lucia, St.Vincent and Grenadines		India, Nepal, Pakistan, Sri Lanka, Bangladesh	Ethiopia	
Multi-language	Belgium, Finland, Ireland, Israel, Malta, Norway, Spain, Sweden, UK	Bosnia, Estonia, Russia	Canada, USA		Hong Kong, India, Sri Lanka, East Timor	Eritrea, Namibia, South Africa, Zimbabwe	New Zealand, Papua New Guinea

Appendix B. Details of ballot paper design

Country		Electoral system	Color		Symbols		Photos	Name order			Ballot type			Language		
			1	2	3	4		5	6	7	8	9	10	11	12	13
Albania	Leg	P-TRS	•					•			•			•		
Angola	Pres	TRS		•			•		•		•			•		
Angola	Leg	List PR		•	•				•		•			•		
Antigua and Barbuda	Leg	FPTP	•					•			•			•		
Argentina	Leg	List PR		•	•					•		•		•		
Armenia	Leg	P-FPTP	•					•			•			•		
Australia	Sen	STV	•						•	•	•			•		
Australia	Leg	AV	•						•		•			•		
Austria	Leg	List PR	•						•	•	•			•		
Azerbaijan	Leg	P-TRS	•					•			•			•		
Bahamas	Leg	FPTP	•		•			•			•			•		
Bangladesh	Leg	FPTP	•			•			•		•			•		
Barbados	Leg	FPTP	•					•			•			•		
Belgium	Leg	List PR	•						•	•	•				•	
Bolivia	Leg	MMP		•	•				•		•			•		
Bosnia and Herzeg.	Leg	List PR		•				•		•	•				•	•
Botswana	Leg	FPTP		•	•			•			•			•		
Brazil	Pres	TRS	•						•		•			•		
Brazil	Leg	List PR	•						•		•			•		
Cambodia	Leg	List PR	•		•				•		•			•		
Canada	Leg	FPTP	•					•	•		•					•
Chile	Leg	List PR	•		•			•			•			•		
China	Vil	SNTV	•					•			•			•		
Colombia	Leg	List PR	•				•		•		•			•		
Congo	Leg	TRS	•		•						•			•		
Congo	Pres	TRS	•		•		•	•				•		•		
Costa Rica	Pres	TRS		•	•		•		•		•			•		
Costa Rica	Leg	List PR		•	•				•	•	•			•		
Cyprus	Pres	FPTP	•		•		•	•			•			•		
Cyprus	Leg	List PR	•		•			•			•			•		
Denmark	Leg	List PR	•						•	•	•			•		
Dominican Republic	Leg	List PR		•	•		•		•			•		•		
Dominican Republic	Pres	FPTP		•	•		•		•			•		•		
East Timor	Ref	FPTP		•	•			•			•				•	
Ecuador	Pres	TRS		•	•		•		•		•			•		
Ecuador	Leg	P-Block		•	•				•	•	•			•		
El Salvador	Leg	List PR		•	•			•			•			•		
Eritrea	Ref	List PR		•							•				•	
Estonia	Leg	List PR	•						•	•	•				•	
Estonia	Pres	TRS	•						•		•				•	
Ethiopia	Leg	FPTP	•			•					•			•		
Fiji	Leg	AV	•		•					•	•			•		
Finland	Pres	TRS	•										•			•
Finland	Leg	List PR	•										•			•
France	Leg	TRS	•		•							•		•		
Georgia	Leg	P-TRS	•						•		•			•		
Germany	Leg	MMP	•						•	•	•			•		
Greece	Leg	List PR	•		•		•			•	•	•		•		

Appendix B (*continued*)

Country		Electoral system	Color		Symbols		Photos	Name order			Ballot type			Language		
			1	2	3	4		5	6	7	8	9	10	11	12	13
Grenada	Leg	FPTP	•			•		•			•			•		
Guatemala	Pres	TRS	•		•		•		•		•			•		
Guinea	Leg	P-FPTP		•	•		•					•		•		
Guinea-Bissau	Leg	List PR		•	•				•		•			•		
Guinea-Bissau	Pres	TRS		•			•	•			•			•		
Guyana	Leg	List PR	•		•			•			•			•		
Haiti	Leg	TRS		•	•				•		•			•		
Haiti	Sen	TRS		•	•		•	•			•			•		
Haiti	Pres	TRS		•	•		•		•		•			•		
Honduras	Pres	FPTP		•	•		•				•			•		
Hong Kong	Leg	Mixed	•						•		•				•	
Hungary	Pres	TRS	•							•	•			•		
Hungary	Leg	MMP	•		•				•		•			•		
India	Leg	FPTP	•			•			•		•				•	•
Indonesia	Leg	List PR											•	•		
Ireland	Leg	STV	•				•	•			•				•	
Isle of Man	Leg	FPTP	•					•			•			•		
Israel	Leg	List PR	•						•		•					•
Italy	Leg	MMP	•		•						•			•		
Japan	Leg	P-FPTP									•		•			
Jordan	Leg	SNTV	•								•		•	•		
Kenya	Pres	FPTP	•		•				•		•			•		
Kyrgyzstan	Leg	TRS	•					•			•			•		
Latvia	Leg	List PR	•							•		•		•		
Liberia	All	List PR		•	•		•			•	•			•		
Macedonia	Pres	TRS	•					•			•			•		
Malawi	Ref	FPTP	•		•							•		•		
Malawi	Leg	FPTP	•		•				•			•		•		
Malawi	Pres	FPTP		•	•		•		•			•		•		
Mali	Pres	TRS		•			•			•		•		•		
Malta	Leg	STV	•		•			•			•				•	
Mexico	Leg	P-FPTP		•	•				•		•			•		
Mongolia	Leg	FPTP	•						•	•	•			•		
Montenegro	Leg	FPTP	•						•		•			•		
Morocco	Leg	FPTP		•	•											
Mozambique	Leg	List PR		•	•				•		•			•		
Namibia	Reg	List PR	•		•			•	•		•					•
Namibia	Leg	List PR	•		•			•			•				•	
Nepal	Leg	FPTP	•			•					•			•		
Netherlands	Leg	List PR	•						•		•			•		
New Zealand	Leg	MMP		•	•			•	•		•					•
Nicaragua	Pres	TRS		•	•		•		•		•			•		
Nicaragua	Leg	List PR		•	•				•	•	•			•		
Nigeria	Pres	FPTP		•	•		•	•			•			•		
Nigeria	Leg	FPTP		•	•			•			•			•		
Norway	Leg	List PR	•							•		•				•
Pakistan	Leg	FPTP	•			•			•		•			•		
Panama	Leg	P-FPTP	•		•				•			•		•		

(*continued on next page*)

Appendix B (*continued*)

Country		Electoral system	Color		Symbols		Photos	Name order			Ballot type			Language		
			1	2	3	4		5	6	7	8	9	10	11	12	13
Papua New Guinea	Leg	FPTP	•				•		•		•				•	
Paraguay	Pres	FPTP	•		•		•				•			•		
Peru	Pres	TRS		•	•		•		•		•			•		
Peru	Leg	List PR		•	•				•		•			•		
Philippines	Sen	P-FPTP											•			
Portugal	Pres	FPTP	•				•		•		•			•		
Portugal	Leg	TRS	•		•						•			•		
Romania	Leg	List PR	•		•				•	•	•			•		
Romania	Pres	TRS	•		•				•		•			•		
Russia	Pres	TRS	•						•		•					•
Russia	Leg	P-FPTP	•						•		•					•
Sierra Leone	Ref	FPTP	•		•						•			•		
Slovakia	Leg	L.PR	•		•				•		•		•			
South Africa	Leg	List PR		•	•		•	•			•				•	
Spain	Leg	List PR	•		•					•		•				•
Spain	Sen	LV	•		•				•		•					•
Sri Lanka	Pres	AV	•			•			•		•				•	
Sri Lanka	Leg	List PR	•		•				•		•				•	
St. Lucia	Leg	FPTP	•			•		•			•			•		
St. Vincent and Grenadines	Leg	FPTP	•			•		•			•			•		
Suriname	Leg	List PR	•		•		•		•	•	•			•		
Sweden	Leg	List PR										•				•
Tanzania	Pres	TRS	•		•		•	•			•			•		
Tanzania	Leg	FPTP	•		•			•			•			•		
Togo	Pres	TRS		•	•							•				
Trinidad and Tobago	Leg	FPTP	•		•			•			•			•		
Tunisia	Leg	P-PB	•					•			•			•		
Turkey	Leg	List PR	•		•				•		•			•		
Uganda	Leg	FPTP	•				•		•		•			•		
UK	Leg	FPTP	•					•	•		•					•
USA	Leg	FPTP	•								•					•
Uruguay	Pres	FPTP		•	•		•					•		•		
Uruguay	Leg	List PR		•	•							•		•		
Venezuela	Pres	TRS		•	•		•		•		•			•		
Venezuela	Leg	MMP		•	•				•		•			•		
Zimbabwe	Pres	FPTP	•		•		•		•		•				•	
Zimbabwe	Leg	FPTP	•		•				•		•				•	

Key: FPTP, first past the post; BV, block vote; PB, party block; AV, alternative vote; TRS, two-round system; SNTV, single non-transferable vote; List PR, list proportional representation; MMP, mixed member proportionality; STV, single transferable vote; P-, parallel (see Reynolds and Reilly, 1997). Leg, legislative; Pres, presidential; Sen, senate; Ref, referendum; Vil, village elections; All, presidential, senate and legislative election all on same ballot. NB: Data based on ballot from last available election (pre-2002). 1, black and white or black and one color; 2, full (multi) color; 3, party symbols; 4, candidate symbols; 5, candidate and/or party names alphabetical; 6, candidate and/or party names randomized (or by a non-alphabetical method of ranking); 7, candidate names by party list order; 8, make mark on single ballot, single ballot box; 9, detach and place party/candidate portion in ballot box (no necessary mark on ballot); 10, blank ballot, write in party name or candidate name (or number); 11, single language; 12, multiple languages – on all ballots; 13, different languages, different ballots.

Appendix C. Kamuzu country profile

C1. Kamuzu

Geography	Island state 2000 miles^2
	Main island 1500 miles^2
	Babu 500 miles^2
People	Population 1 million (approx.)
	660,000 on mainland
	340,000 on Babu island
Ethnic groups	Blues 660,000 (66%)
	Pinks 340,000 (33%)
Languages	English (spoken by Blues and most Pinks)
	Babuese (spoken by Pinks)
Literacy	86% (Blues 92%, Pinks 80%)
Major cities	Chimanimani (capital on mainland; 200,000 people)
	Moo (on Babu; 50,000)
Land use	65% plantations
	35% urban
Climate	Hot, humid, tropical monsoon season (May–Oct)
Economy	GDP per capita ($4500 pa)
Major exports	Sugar, tea, rum
Government type	Presidential democracy
	Unicameral parliament

C2. History

The two islands that make up the nation state of Kamuzu (the main island of Kamuzu and the smaller island of Babu) were uninhabited until settlement by Europeans in the 1600s. The two primary ethnic groups are descendants of plantation workers and slaves brought to Kamuzu at the time of settlement.

The Blues make up two-thirds of the population and are three-quarters of the population of the main island of Kamuzu. Blues are on average wealthier than their Pink neighbors; dominate the central government and bureaucracy; are the predominant land owners; form the core of teachers, lawyers, doctors and other professionals; staff the police and army.

Pinks are only one-third of the overall national population but are the majority (75%) on the smaller island of Babu. On average Pinks are poorer and less educated than their Blue counterparts and they work on the sugar and tea plantations owned by Blues, but there is a small group of wealthier Pinks who have penetrated the commerce sector in the main city of Babu (Moo).

C3. Political parties

C3.1. The Kamuzu People's Party (KPP)

The KPP predominantly draws its support from wealthy Kamuzuians and those on the mainland. It has won every election since independence. It believes in

a capitalistic free market economy and opposes the secession of the island of Babu from the Kamuzu mainland.

C3.2. The Babu Front (BF)

The BF predominantly draws its support from inhabitants of Babu island. It has lost every election since independence. It believes in a socialistic state run economy with subsidies for the poor working class and independence for the island of Babu.

C4. The vote

It is election time in Kamuzu. As usual there are only two parties, the Kamuzu people's Party (KPP) and the Babu Front (BF). There are two elections—one for the Presidency and one for the parliament—and a referendum on independence for the island of Babu. Voting is as follows:

- Presidential election: place an "X" by the candidate of your choice.
- Parliamentary election: you have three votes. Place an "X" by the three candidates you choose.
- Referendum: the question is "Do you believe the island of Babu should become independent?" Mark an "X" by Yes or No.

You: you are a relatively poor Blue living on the mainland of Kamuzu.

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