



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

Risk attitudes and independence vote choice

Citation for published version:

Liñeira, R & Henderson, A 2019, 'Risk attitudes and independence vote choice', *Political Behavior*, pp. 1-20.
<https://doi.org/10.1007/s11109-019-09560-x>

Digital Object Identifier (DOI):

[10.1007/s11109-019-09560-x](https://doi.org/10.1007/s11109-019-09560-x)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Peer reviewed version

Published In:

Political Behavior

Publisher Rights Statement:

This is a post-peer-review, pre-copyedit version of an article published in Political Behavior. The final authenticated version is available online at: <https://link.springer.com/article/10.1007/s11109-019-09560-x>

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.



Introduction

Voting is a gamble. In elections, voters can be uncertain about where candidates stand on issues or what governments will do once elected. Attitudes to risk may, therefore, affect how voters approach this gamble and arrive at a voting decision. We know that risk-averse voters tend to avoid candidates who argue for a departure from the *status quo* (Kam & Simas, 2012), candidates with ambiguous issue positions (Tomz & Van Houweling, 2009), and challengers that face experienced incumbents (Eckles, Kam, Maestas, & Schaffner, 2013; Morgenstern & Zechmeister, 2001). A segment of voters that systematically avoids uncertainty or abrupt change (Bartels, 1986) produces — everything else being equal — an electorate that leans to well-known alternatives, which creates a powerful advantage for the *status quo* (Berger, Munger, & Potthoff, 2000; Christin, Hug, & Sciarini, 2002).

In this article, we test the effect of individual risk attitudes on the choice of voting in favor or against secession in the context of the 2014 Scotland independence referendum. We do so by using a five-item measure of risk attitudes that proves to be a valid, internally consistent and stable across waves in a pre-post referendum survey. Compared to previous debates around the impact of risk on independence vote choice, this measure places us in a better position to assess the impact of risk attitudes on the vote choice once political identities, values, and assessments have been taken into account. Furthermore, we have extended the debate by focusing on heterogeneous effects. Apart from a direct effect of risk attitudes on the vote, we find that the information moderates the effect of risk attitudes on the choices: politically unaware voters with lower capacity to predict the consequences of political choices are particularly affected by their risk attitudes when making their ballot choices.

1. Risk Attitudes and the Independence Choice

Two sources of evidence support the existence of a *status quo* bias in referendums. First, evidence from polities where referendums are held frequently - such as Switzerland or California - shows that change is more often rejected than accepted (Bowler & Donovan, 1998; Christin et al., 2002). Second, the contrast of voting intentions to referendum results shows that support for the pro-change side is consistently higher in the final opinion polls than in the referendum returns (LeDuc, 2002a; Renwick, 2014, 2017). This suggests that undecided voters, uncertain about the consequences of a new proposal, vote disproportionately for rejecting the change and sticking with the devil they know.

Psychological research has also underlined that the *status quo* has several psychological advantages over change. Several motivated and unmotivated processes of cognitive and affective nature work together to make existing states seem more prevalent, appealing and correct than alternative ones. First, existing states are more likely to be available and cognitively accessible, which makes the *status quo* easier to be recognized and earlier to be processed than alternatives. This assures the mental dominance of the *status quo*, which is likely to be used as a point of comparison when considering alternatives that, in contrast, require more time and effort to be imagined (Eidelman & Crandall, 2009). Second, the *status quo* has some evaluative advantages. Existing states are assigned worth, value, and goodness by virtue of their existence, so just describing an option as the *status quo* increases the likelihood that it is chosen (Eidelman & Crandall, 2009, 2012; Kay, Jimenez, & Jost, 2002). In order to occur, political change must, therefore, overcome all these initial barriers.

Political change makes risk explicit, which prompts the connection between the *status quo* bias and the notion of risk. On the one hand, prospect theory focuses on the characteristics of choice and find that change is accepted depending on the framing of gains and losses, but also on risk exposure, i.e., the individual's position relative to the expected gains and losses (Kahneman & Tversky, 1979; Quattrone & Tversky, 1988). More recent studies have expanded the original interest to explore the heterogeneous reactions to risk and uncertain choices, either independently or interactively with the context of the choice. In contrast to early voting models that assume voters are uniformly risk averse (Alvarez, 1997; Enelow & Hinich, 1981; Shepsle, 1972), more recent research has found important variations in risk attitudes with important consequences for vote choice (Berinski & Lewis, 2007; Eckles et al., 2013; Kam & Simas, 2012; Morgenstern & Zechmeister, 2001; Tomz & Van Houweling, 2009), political participation (Kam, 2012), and policy preferences (Berinski & Lewis, 2007; Eckles & Schaffner, 2011; Ehrlich & Maestas, 2010; Steenbergen & Siczek, 2017).

Since referendums on independence propose a substantial political change, researchers have sought to identify the role of risk attitudes in saying 'yes' or 'no' to secession. Independence referendums are salient votes that propose a change of uncertain consequences. The stakes are high because the independence decision has consequences for the whole political system. It affects the borders of the polity and the boundaries of the political community; it implies drafting a new constitution that changes the institutional regime; it may also alter the party system and the choice structure of the future authorities (Dalton, 2004).¹ **The salience of the**

choice may facilitate voter's familiarity with the issue, but uncertainty is still prominent: first,

¹ The massive turnout levels achieved in the independence referendums of Quebec and Scotland indicate the saliency of the choice. In Quebec, turnout was 85.6 percent in 1980 and 93.5 percent in 1995. In Scotland 2014, turnout was 84.6 percent. Both the 1995 referendum and the 2014 established turnout records in Quebec and Scotland respectively.

because independence referendums are rare in the context of stable democracies and the electorate can rely on few precedents; more importantly, because some of the independence specifics depend on post-referendum negotiations between the government of the seceding state and the government of the current state, the outcome of which is unknown before the vote.²

Evidence on the impact of risk attitudes on independence vote is, however, contradictory. Using the 1995 Quebec sovereignty partnership referendum as a case study, Nadeau et al. (1999) argue that general predispositions towards risk influences ballot choice and, as a result, risk-acceptant and risk-averse voters use different criteria when forming preferences. The former group decides on the basis of the anticipated costs and benefits of each option; by contrast, the latter judge options on the basis of the potential worst-case scenario, an evaluation that is usually associated with the pro-change option. In the aggregate, this produces a bias in favor of the *status quo*, a situation that should be expected in any polity-reshaping referendum that proposes major changes such as regime changes or important supra-national commitments (Nadeau et al., 1999).

Clarke et al. (2004) analyzed the same Quebec sovereignty referendum using different data and reached the opposite conclusion. They argue that a referendum on independence is a political vote like any other and, as such, party and leader cues are the primary influence over

² Although the no-vote usually implies no changes, this is not necessarily the case. In order to take into account the possibility that a vote against the proposal does not lead to a continuation of the pre-existing *status quo*, the literature distinguishes between the ballot proposal and the reversion point – the situation that prevails in the event of a no-vote – as the main alternatives of a binary-choice referendum (Hobolt, 2009, pp. 45–46). In the context of independence referendums, a vote against secession does not necessarily mean that changes will not occur, but it is difficult to think of a context in which the uncertainties related to a no-vote can be compared to the unknowns associated to a yes-vote.

vote choice. They also point to the vast literature on referendum voting that has consistently stressed the importance of party cues on referendum votes (Bowler and Donovan 1998; Clarke, Elliott, and Stewart 2015; Clarke and Kornberg 1994; Hug and Sciarini 2000; Johnston, Blais, Gidengil, and Nevitte 1992; Lupia 1994; Lupia and McCubbins 1998). Party cues should be particularly important in this type of referendums because parties tend to be more united and take clear stances on the referendum question, which reinforces the role of partisanship on vote choice (LeDuc, 2003; de Vreese, 2007; de Vreese & Semetko, 2004).

Although we recognize the importance of group-attachments, partisanship, and other cues in independence referendums, we argue in this article that attitudes towards risk have a direct effect on vote choice once we hold everything else constant. By risk attitudes, we mean the individual's degree of comfort (or discomfort) to choose options that could lead to unknown outcomes (Dahlbäck, 1990; Meertens & Lion, 2008). Numerous researchers have identified variation in citizens' response to risk, including physical risks, gambling risks, decision-making risks, and investment choices (Filbeck, Hatfield, & Horvath, 2005; Kowert & Hermann, 1997; Zaleskiewicz, 2001). To a certain extent, risk attitudes are a general and enduring predisposition which, rather than being related to specific situations, have been linked to stable personality traits (Carducci & Wong, 1998; Nicholson, Soane, Fenton-O'Creevy, & Willman, 2005; Weinstein & Martin, 1969; Zuckerman & Kuhlman, 2000) and genetic characteristics (Cesarini, Dawes, Johannesson, Lichtenstein, & Wallace, 2009; Roiser et al., 2009).

Risk attitudes affect independence vote choice because risk-averse voters try to avoid uncertain choices to minimize the chances of incurring in a loss. When facing a risky choice, a voter can focus on the potential gains, on the potential losses, or on both. Because of their

disposition, risk-averse individuals tend to focus on potential losses (Dahlbäck, 1990; Ehrlich & Maestas, 2010). They often have strong negative emotions in anticipation of such losses, including fear and anxiety. By contrast, risk-tolerant voters do not experience negative emotions faced with an uncertain choice (Dahlbäck, 1990; Loewenstein, 1994; Zuckerman, 1979).

The context of an independence referendum choice should elevate the importance of attitudes towards risk because risk attitudes affect decisions, particularly, when they are important and they are processed in a non-impulsive manner (Dahlbäck, 1990, 1991). In consequence, our first hypothesis is:

H1. Risk-averse voters will tend to vote against independence to a greater extent than risk-tolerant voters.

The effects of risk tolerance on vote choice stated in hypothesis 1 may be mitigated by political knowledge. In high-stakes referendums, voters are usually bombarded with conflicting claims of the consequences of the proposal, raising the costs of tracking down the information voters need to make up their minds (de Vreese 2007; de Vreese and Semetko 2004). In independence referendums, despite the abundant information, voters have to make an uncertain prospective judgment what independence will look like if chosen. Decision making under uncertainty means that alternatives do not lead to known outcomes, but to outcomes with probabilities (Alvarez 1997, 28).

The issue of uncertainty is an issue of imperfect information or, more precisely, information that does not necessarily translates into knowledge. Information constitutes the raw data that

allows people to acquire knowledge, whereas knowledge refers to the ability of individuals to predict the consequences of actions (Lupia and McCubbins 1998, 25). Knowledge reduces uncertainty. Therefore, we should expect that politically-aware individuals are less affected by their risk attitudes when deciding their ballot than those who are less politically-aware.

We, therefore, believe that knowledge is connected to uncertainty and to vote choice. On the one hand, research consistently shows that people differ greatly in their levels of political awareness and information (see, for example, Alvarez & Brehm, 2002; Converse, 1975, 2000; Zaller, 1992). Individuals who follow more closely the political process and store greater amounts of political information have a greater capacity to translate information into knowledge and, therefore, are better equipped to predict the consequences of political choices (Zaller, 1992). On the other hand, evidence shows that those voters who follow a referendum campaign with less attention and those who are less informed about the issues are more likely to support the *status quo* (Christin et al., 2002; Whiteley, Clarke, Sanders, & Stewart, 2012). Similarly, evidence shows the higher the number of undecideds in the last pre-election poll, the higher the final support for the *status quo* (Bowler & Donovan, 1998, p. 49).

In our view, the causal link behind these findings explains the moderated effect of risk attitudes on vote choice. Politically aware voters have a greater capacity to obtain certainty about the consequences of alternative choices than politically unaware voters. The latter have a greater feeling that they are gambling with their vote, which gives more room to risk attitudes to affect their vote choices. Therefore, we expect that engaged and informed voters should be less influenced by their risk attitudes because they have greater certainty about the consequences of the choice. By contrast, less politically aware and informed voters should be more uncertain about the consequences of the referendum proposal and, consequently, they

should be particularly affected by their risk attitudes when choosing their ballots. Given that we believe that political awareness moderates the impact of risk tolerance so that less politically aware voters are particularly affected by their risk attitudes when deciding their vote, our second hypothesis is the following:

H2. Risk attitudes will have a stronger impact on independence vote choice among voters with lower levels of political involvement and awareness

2. Empirical Strategy

Case study

The Scottish independence referendum is an exemplary and prototypical case of the rare phenomenon of votes to secede from a consolidated democracy. The most similar comparison to the Scottish experience would be the Quebec referendums in 1980 and 1995. However, the questions asked in those referendums were ambiguous and, although the Canadian Government participated in the campaigns, it did oppose the notion that the votes were binding. By contrast, the Edinburgh Agreement between the UK and the Scottish governments established a framework for the referendum process which removed any doubt about its legitimacy. The clear referendum question ‘Should Scotland be an independent country?’ made clear that a yes-vote would result in independence.³

³ The clear road to the referendum enhanced the legitimacy of the vote further. The referendum was triggered by the Scottish National Party (SNP) victory in the May 2011 elections to the Scottish Parliament. The SNP, which included the promise of holding an independence referendum in its manifesto, was the first party ever to achieve a majority in the Scottish Parliament, elected through an additional member system. This majority was interpreted by both the Scottish and the UK government as a mandate to hold an independence referendum.

Polls in Scotland had previously shown that the median voter supported neither independence nor the *status quo*, but more powers for the Scottish Parliament within the UK. To attract this voter, the pro-independence side – dominated by the Scottish government and the SNP – proposed a version of independence that was coined as ‘independence light’: an independent Scotland that would maintain several unions with the UK (currency, monarchy, defense, the EU), dissolving only the political union. Similarly, the pro-union campaign – which united on the same side the UK government and the three main British parties – tried to persuade the electorate that a no-vote would result in the devolution of further powers to the Scottish Parliament (McLean, Lodge, & Gallagher, 2013).

Apart from trying to attract the median voter, the pro-independence campaign framed independence as an opportunity to pursue policy goals without the interference of the UK government based in London, allowing the Scottish government to pursue left-of-center policies that reflect the pro-social justice values that are often perceived by Scots themselves to distinguish the Scottish electorate from the UK one (Henderson, 2014). In addition, independence would allow Scotland to follow strategies that suited its needs and retain oil revenues (Scottish Government, 2013). By contrast, the pro-union campaign warned that independence would end the currency union and the financial support of the Bank of England. It suggested that Scotland might not be able to join the EU or, if a new EU member, would be forced to join the Euro. Finally, it argued that independence would damage the Scottish economy and finances (see Keating, 2017 for a detailed account of the issues addressed during the campaign).

As Figure 1 shows, aggregate public preferences were fundamentally stable throughout much of the campaign, with the ‘no’ side systematically ahead. The ‘no’ lead closed substantially during the last weeks before the vote, but the last week showed a reversal in this trend (Johns, 2016, p. 186).⁴ This basic stability suggests that framing strategies had limited appeal. It also places the Scottish independence referendum campaign within the *uphill struggle* pattern identified by LeDuc (2002b), which is common to all referendums where the issue is well-known to voters and where a substantial portion of the electorate has made up their mind early in the campaign, directing much of the strategy towards undecided voters.

FIGURE 1 HERE

Data and Measurement

To assess the impact of risk on independence vote choice we use data drawn from a two-wave panel online survey conducted three months before and three months after the Scottish referendum on 18 September 2014. The pre-referendum wave included a sample of 2,063 Scottish residents aged 16 or older.⁵ The post-referendum wave was completed by 1,362 of the original respondents.⁶

⁴ The polls gathered in Figure 1 signal the peak support for independence one week before the vote, a support that slightly dropped in the final days of the campaign. Actually, 5 out of the 6 polling companies that measured surveys in the last weeks of the campaign show a drop in the support to independence between the penultimate and the last survey; the other polling company showed no change between the last two surveys.

⁵ In the Scotland independence referendum, the electoral franchise was extended to include 16- and 17-year-olds.

⁶ The online fieldwork was conducted by ICM. The pre-referendum data were collected from 9 June 2014 to 30 June 2014, whereas the post-referendum data were collected from 2 December 2014 to 23 December 2014. Further details may be found at...

Researchers in political behavior, political psychology, and behavioral economics exist to measure risk attitudes employ different indicators to measure risk (Meertens & Lion, 2008). With few notable exceptions (Kam, 2012; Kam & Simas, 2010), political scientists have typically used a single indicator to assess the relevance of risk orientations to political behaviors. Since any single indicator is likely to contain measurement error, we use a battery of five items that asks individuals to judge their own willingness to take risks in different contexts to measure risk attitudes: ‘How willing are you to take risks... 1) in general, 2) in financial matters, 3) on the roads – when walking or cycling, 4) in sports and leisure activities, 5) that may affect your health. All items range from 0 to 10, where 0 means ‘Unwilling to take risks’ and 10 means ‘Fully prepared to take risks’. This standard measure, validated by Dohmen et al. (2011), is used by the British Household Panel Survey, the National Longitudinal Survey of Youth, and the German Socioeconomic Panel.

After summing the five items and then rescaling them to range from 0 (risk averse) to 1 (risk tolerant), our measure has a mean of 0.422 and a standard deviation of 0.216. It is a reliable measure, as it is both internally consistent (Cronbach’s $\alpha = 0.85$) and stable across waves ($r_{\text{pre-post}}=0.83$). We ascertain the validity of our measure by examining whether it correlates with a series of individual-level characteristics. Consistent with the existing literature, we find that our measure of risk-aversion correlates positively with age, gender (Byrnes, Miller, & Schafer, 1999; Weber, Blais, & Betz, 2002), education and income (Halek & Eisenhauer, 2001; MacCrimmon, Wehrung, & Stanbury, 1986; Riley Jr. & Chow, 1992; Rosen, Tsai, & Downs, 2003; Sung & Hanna, 1996). Women, the older, those with lower levels of education, and those with lower incomes are, therefore, particularly risk averse.

Our measure of risk tolerance is particularly suited to our needs for four reasons. First, the questions are all clearly distinct in nature from the decision task. Second, the questions are distinct from the focus of the dependent variable, in our case referendum vote choice. Third, the questions have been used as valid indicators of risk attitudes in prior studies. Finally, the measure is compact enough to be administered in a survey context, avoiding some of the difficulties associated to long and administratively cumbersome measures.

3. Findings

3.1. The direct effect of risk on independence vote choice

We conduct a regression analysis to determine whether voters in the 2014 Scottish independence referendum were influenced by risk attitudes after holding constant other factors. Table 1 identifies the different variables that might affect referendum vote choice: risk attitudes, socio-demographics, national identification, partisanship, left-right self-placements and feelings about the main leaders of the pro-independence and the pro-union campaigns. The dependent variable is recall vote measured at the post-referendum wave. All independent variables are measured at the pre-referendum wave to minimize endogeneity problems.⁷

TABLE 1 HERE

⁷ Collinearity tests reveal no multicollinearity issues. None of the independent variables specified in Table 1 and Table 2 show a variance inflation factor higher than 1.9.

Among the socio-demographic attributes, we consider the effects of age, gender, educational attainment and social class.⁸ We also introduce enduring predispositions such as orientations towards the two main national communities, Scotland and Britain. The influence of national identification on support for independence is well documented (Bélanger & Perrella, 2008; McCrone & Paterson, 2002; Nadeau & Fleury, 1995). National identification refers to the attachment that subjectively links the individuals with national communities. It is a remarkably stable attitude that reflects socialization and past experiences. It does not change easily in the short-term (Carey, 2002; Dalton, 1999, p. 74), and it conditions political attitudes in general and constitutional preferences in particular (Blais & Nadeau, 1992, pp. 95–96). We use two different scales to measure the identification with the two national communities, Scotland and Britain. Asked in this way, the identity questions do not force individuals to choose whether they feel Scottish or British; voters may assess both at equal strength or prioritize one at the expense of the other.

The model also introduces as vote predictors political predispositions such as party identification and left-right self-placements, jointly with evaluations of the main campaign leaders. Parties constitute one of the main sources of information during referendum campaigns; in this particular referendum, all parties joined one of the two campaign groups that – jointly with the Scottish and the UK governments – constituted the main source of information. Parties, therefore, provided cues that were processed by voters through their partisan feelings (LeDuc, 2003; de Vreese, 2007; de Vreese & Semetko, 2004). However, we must also bear in mind that the causal direction of partisanship is not straightforward. The salience of the constitutional issue in Scotland makes possible that constitutional preferences

⁸ See Table A1 in the appendix section for details on the measurement of independent variables and descriptive statistics.

might well influence identification with political parties rather than the other way around, which might lead us to overestimate the effect of partisanship on the vote. With regard to leaders, the model includes the respondents' feelings about three main leaders involved in the campaign: the Scottish First Minister and the leader of the 'Yes Scotland' campaign, Mr Alex Salmond; the leader of the 'Better Together' campaign, Mr Alastair Darling; and the UK Prime Minister, Mr David Cameron. The three are drawn from the three largest parties in Scotland, the Scottish National Party, Labour and Conservatives respectively. These evaluations may constitute an additional source of cues that voters use to reach their vote choice (Clarke & Kornberg, 1996; Lupia, 1994).

The results show that many of our predictors operate in the expected direction. Risk attitudes show the expected positive effect: those who are more tolerant to risk are more willing to vote for independence. National identifications also show significant effects in the expected direction: those who most identify more strongly as Scottish are most likely to vote 'yes', whereas the opposite is true for those voters with strong pro-British identities. The model also makes evident that British identity has a stronger effect than Scottish identity. This is related to the close connection between British identity and pro-union preferences which contrasts with the more diverse preferences of those with a Scottish identity (Bond, 2000; McCrone & Paterson, 2002). Among the socio-demographic attributes, only age shows a significant effect once we control for political attitudes.

Party identification and feelings about leaders are likewise significant. We already mentioned that the effect of party identification and feelings about party leaders on voting independence might well be overestimated as a result of endogeneity, which may have the indirect effect of making it more difficult for risk attitudes to have a net effect on voting 'yes'. Even under

these circumstances, the direct effect of risk attitudes on vote choice is strong and statistically significant.⁹

In summary, risk attitudes show a direct effect on the decision to support independence in the context of the Scottish independence referendum. The 2.191 logit coefficient of our risk tolerance measure indicates that moving from 0 to 1 in our risk tolerance scale increases the odds of voting independence by 8.950. A more comprehensive account of the impact of risk attitudes on the independence vote is shown in Figure 2, which shows the probabilities of voting independence as risk tolerance increases while holding the other independent variables constant at their means.¹⁰ Risk tolerance shows a substantial effect on the vote: the most risk-averse voters show a probability of supporting independence of .25, whereas the most risk-tolerant individuals have a probability of voting for independence of .75.

FIGURE 2 HERE

3.2. The moderation role of political awareness

The previous section has shown that – everything else being equal – those who are more risk-tolerant tend to vote ‘yes’ to a greater extent than risk-averse individuals. Risk matters

⁹ This is an important point because one of the main criticisms of Clarke and collaborators (2004) of the model produced by Nadeau and collaborators (1999) in the context of the 1995 Quebec referendum was that key variables political variables such as party identification and feelings about party leaders were absent in their model specification. They also criticize the fact that Nadeau et al. (1999) find interactive but not main effects of risk attitudes, noting that ‘it is difficult to argue that general orientations to risk impact on referendum choices but that there is no main effect’ (Clarke et al., 2004, p. 349).

¹⁰ Holding variables at their means indicates that we use the sample mean in the case of cardinal-level variables and sample proportions for the other types of variables to calculate our probabilities.

because independence referendums propose a high-stakes choice of uncertain consequences. If this is the case, we should also expect that risk aversion plays a greater role for those who are most uncertain about the political consequences of the outcome. Given that some of the uncertainty may be related to a voter's ability to gather and process political information, we believe that risk attitudes will have a stronger impact on the choices of those who are less aware and less involved with the political process (Converse, 1964; Delli Carpini & Keeter, 1996; Zaller, 1992).

To test this moderation effect, we first need to test if political awareness is connected to certainty about the consequences of independence. To measure certainty, we asked respondents to rate their knowledge on 'the consequences if Scotland had voted to become an independent country' using a 0 to 10 scale. To measure general levels of individual's political knowledge about and involvement with the political process, we use two indicators: to identify or not to identify with a party, and a battery of five items which quizzes respondents about factual political knowledge.¹¹ Our moderation test finds a clear relationship between political awareness and certainty about the consequences of independence. Those who feel close to a party score 7.51 in our 0-10 certainty scale, whereas those who have no party attachments score 6.21, a 1.30 statistically significant difference ($p < 0.001$). Likewise, greater levels of political knowledge show a positive ($r = 0.31$) and statistically significant ($p < 0.001$) relationship with certainty about the consequences of independence. Therefore,

¹¹ Three of the items involved showing pictures of different political leaders to our respondents and giving them 4 options about the office that each leader occupies. Only one option was correct. The political figures were Iain Duncan Smith (then Secretary of State for Work and Pensions); Hermann Van Rompuy (then President of the European Council); and Ruth Davidson (leader of the Scottish Conservative Party). Two additional questions also offered voters four options: 'In which year did New Labour under Tony Blair first form a government?' (correct answer '1997'), and 'Which of the following positions does the Conservative Party hold in Westminster?' (correct answer was 'The Conservative party heads a coalition government').

general indicators of political awareness and involvement are related to the levels of certainty respondents have about the consequences of the ballot proposal.

Table 2 tests the interactive relationship between our indicators of political awareness, involvement and risk attitudes. We introduce each interaction separately to test if we find similar patterns in each model. The analysis shows that the interactions are significant and the main effect for risk remains. More interestingly, they also display the same pattern: the higher the political awareness, the lower the effect of risk attitudes on the vote. Given that our model is a non-linear one, the magnitude of the interaction effect depends on all the covariates in the model. We, therefore, need to compute meaningful measures to interpret and assess our interactions.

TABLE 2 HERE

Figure 3 shows three panels that illustrate the probability of supporting independence by risk tolerance for respondents with high and low values of political awareness and involvement.¹² The top-left panel contrasts the impact of risk tolerance for individuals who express minimum and maximum levels of certainty about the consequences of independence. As we hypothesized, risk tolerance shows a positive impact among those who feel most uncertain about the consequences of independence while there is no substantial effect among those who express maximum certainty. The same pattern can be observed in the other two panels: risk tolerance shows a positive impact among those with minimum levels of political knowledge

¹² Figure A1 in the appendix section displays the average marginal effects (Ai & Norton, 2003, 2003; Clarke, Elliott, & Stewart, 2015; Karaca-Mandic, Norton, & Dowd, 2012).

and among those who identify with no party, while there is no substantial effect for the politically uninformed and the non-partisans.

FIGURE 3 HERE

4. Discussion and Conclusions

Political change makes risk explicit. To assess how risk may affect vote choice in a polity-reshaping vote, we have examined vote choice in the context of Scotland's 2014 referendum on independence. To reach our conclusions we have made use of a two-wave panel survey. We designed the questionnaire to include a previously-validated measure of risk tolerance in a representative sample of the population; our own validity and reliability tests are consistent with the existing literature and confirm the validity, internal consistency, and stability of our measure. Furthermore, the panel design and the exogenous nature of our risk tolerance measure minimizes endogeneity problems between risk attitudes and vote choice.

We found that risk attitudes have a direct effect on referendum voting which is robust to a wide range of controls such as demographics, national identification, partisanship, left-right orientations and leaders' evaluations. Risk attitudes matter because independence referendums offer an uncertain choice with high stakes. Faced with uncertainty, risk-averse voters try to prevent losses by voting against change; more risk-tolerant voters will be less affected by uncertainty and potential for losses, and thus will reach their voting decisions by relying on other factors. In consequence, the former will tend to vote more against change than the latter. In the aggregate, the fact that a portion of the electorate tends to avoid uncertain options creates a powerful advantage for the *status quo*.

In the domain of politics, political awareness and political involvement enhance a voter's ability to deal with uncertainty which has consequences for how risk attitudes affect vote choice. Individuals who follow the political process more closely and who retain greater amounts of political information are better equipped to predict the consequences of political choices. As a consequence, we have found that those individuals who more engaged and aware of the political process are less affected by their risk attitudes when deciding on independence. Those who are less politically aware are also more uncertain about the consequences of political choices and as a result, their vote choices are particularly affected by their attitudes towards risk. In short, risk attitudes have a direct effect on vote choice, but this effect is moderated by voter's levels of political awareness.

Based on our findings, we expect that individual risk attitudes would play a role in any high-saliency and high-uncertainty vote. In those contexts where there is a shared perception by media, parties, and voters that there is a lot at stake, we expect a high-intensity campaign with considerable media coverage that results in a high turnout and a vote choice driven by the referendum question itself. This would contrast with second-order referendums, where, as other researchers have illustrated, factors such as the state of the economy (Clarke & Kornberg, 1994, 1996), the government's popularity (Franklin, Eijk, & Marsh, 1995), or the opportunity to punish the government without having to vote for another party (Schneider & Weitsman, 1996), would play an important role in driving vote choice. If we add uncertainty about the consequences of the ballot proposal to the high saliency of the vote, we would expect the risk-averse voters to vote against proposals for change more than risk-tolerant voters. In the aggregate, this process an advantage for the *status quo*.

Two further points are worth noting. First, we know that voters are at some remove from the ‘pure’ system, in which information concerning different voting options is evaluated on its merits. Different dispositions, cues and evaluations provide various shortcuts to decision making and this is as true in referendums as in elections. We know that knowledge acquisition is subject to confirmation bias, that voters use heuristic devices such as partisan cues to reach decisions about which options to prefer. Risk attitudes provides another predisposition operating further back in the funnel of causality that remains salient as voting day approaches. The role of risk, much like national identity or partisan identification, should not be seen to generate opinions of lower democratic quality.

Second, notwithstanding our findings we would not claim that risk attitudes will always deliver, in any salient and uncertain vote, a status quo victory. Likewise, a referendum in which the pro-change option wins would not imply that risk attitudes played no role on individual vote choice. What our results show is, first, that risk attitudes are one factor affecting vote choice in polity-reshaping votes. Political arguments that emphasize potentially harmful outcomes of a proposal may, therefore, strike a sensitive chord within a segment of the electorate, but they might not necessarily produce a win for the *status quo*: they are not the sole cause of referendum vote choice, and they can be counterbalanced by providing certainty to the ballot proposal. Our results also show that risk attitudes, combined with factors such as community-identifications, partisanship and leader evaluations provide powerful explanations of the vote choice in referendums. Since this form of collective decision-making is being increasingly used to shape public policy and indeed the very structure of democratic polities, this helps us to understand individual political behavior behind the *status quo* bias.

References

- Ai, C., & Norton, E. C. (2003). Interaction terms in logit and probit models. *Economics Letters*, 80(1), 123–129.
- Alvarez, R. M. (1997). *Information and Elections*. Ann Arbor: Michigan University Press.
- Alvarez, R. M., & Brehm, J. (2002). *Hard Choices, Easy Answers: Values, Information, and American Public Opinion*. Princeton: Princeton University Press.
- Bartels, L. M. (1986). Issue Voting Under Uncertainty: An Empirical Test. *American Journal of Political Science*, 30(4), 709–728.
- Bélangier, É., & Perrella, A. M. L. (2008). Facteurs d'appui à la souveraineté du Québec chez les jeunes: Une comparaison entre francophones, anglophones et allophones. *Politique et Sociétés*, 27(3), 13–40.
- Berger, M. M., Munger, M. C., & Potthoff, R. F. (2000). The Downsian Model Predicts Divergence. *Journal of Theoretical Politics*, 12(2), 228–240.
- Berinski, A. J., & Lewis, J. B. (2007). An Estimate of Risk Aversion in the U.S. Electorate. *Quarterly Journal of Political Science*, 2, 139–154.
- Blais, A., & Nadeau, R. (1992). To Be or Not to Be Sovereignist: Quebeckers' Perennial Dilemma. *Canadian Public Policy / Analyse de Politiques*, 18(1), 89–103.
- Bond, R. (2000). Squaring the circles: demonstrating and explaining the political “non-alignment” of Scottish national identity. *Scottish Affairs*, 32(Summer), 15–36.
- Bowler, S., & Donovan, T. (1998). *Demanding Choices*. Ann Arbor: Michigan University Press.
- Byrnes, J. P., Miller, D. C., & Schafer, W. D. (1999). Gender differences in risk taking: A meta-analysis. *Psychological Bulletin*, 125(3), 367–383.
- Carducci, B. J., & Wong, A. S. (1998). Type A and Risk Taking in Everyday Money Matters. *Journal of Business and Psychology*, 12(3), 355–359.
- Carey, S. (2002). Undivided Loyalties Is National Identity an Obstacle to European Integration? *European Union Politics*, 3(4), 387–413.

- Cesarini, D., Dawes, C. T., Johannesson, M., Lichtenstein, P., & Wallace, B. (2009). Genetic Variation in Preferences for Giving and Risk Taking. *The Quarterly Journal of Economics*, *124*(2), 809–842.
- Christin, T., Hug, S., & Sciarini, P. (2002). Interests and information in referendum voting: An analysis of Swiss voters. *European Journal of Political Research*, *41*(6), 759–776.
- Clarke, H. D., Elliott, E., & Stewart, M. C. (2015). Heuristics, Heterogeneity and Green Choices Voting on California’s Proposition 23. *Political Science Research and Methods*, *5*(4), 755–774.
- Clarke, H. D., & Kornberg, A. (1994). The Politics and Economics of Constitutional Choice: Voting in Canada’s 1992 National Referendum. *The Journal of Politics*, *56*(04), 940–962.
- Clarke, H. D., & Kornberg, A. (1996). Choosing Canada? The 1995 Quebec Sovereignty Referendum. *PS: Political Science & Politics*, *29*(04), 676–682.
- Clarke, H. D., Kornberg, A., & Stewart, M. C. (2004). Referendum Voting as Political Choice: The Case of Quebec. *British Journal of Political Science*, *34*(02), 345–355.
- Converse, P. E. (1964). The Nature of Belief Systems in Mass Publics. In D. E. Apter (Ed.), *Ideology and Discontent* (pp. 206–261). New York: The Free Press of Glencoe.
- Converse, P. E. (1975). Public Opinion and Voting Behaviour. In F. I. Greenstein & N. W. Polsby (Eds.), *Handbook of Political Science. Volume 4: Nongovernmental Politics* (pp. 75–169). Reading, Mass.: Addison-Wesley.
- Converse, P. E. (2000). Assessing the capacity of mass electorates. *Annual Review of Political Science*, *3*, 331–353.
- Dahlbäck, O. (1990). Personality and risk-taking. *Personality and Individual Differences*, *11*(12), 1235–1242.
- Dahlbäck, O. (1991). Saving and risk taking. *Journal of Economic Psychology*, *12*(3), 479–500.
- Dalton, R. J. (1999). Political Support in Advanced Democracies. In P. Norris (Ed.), *Critical Citizens: Global Support for Democratic Government*. Oxford: Oxford University Press.
- Dalton, R. J. (2004). *Democratic Challenges, Democratic Choices: the Erosion of Political Support in Advanced Industrial Democracies*. Oxford: Oxford University Press.

- Delli Carpini, M. X., & Keeter, S. (1996). *What Americans Know About Politics and Why It Matters*. New Haven: Yale University Press.
- Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., & Wagner, G. G. (2011). Individual Risk Attitudes: Measurement, Determinants, and Behavioral Consequences. *Journal of the European Economic Association*, 9(3), 522–550.
- Eckles, D. L., Kam, C. D., Maestas, C. L., & Schaffner, B. F. (2013). Risk Attitudes and the Incumbency Advantage. *Political Behavior*, 36(4), 731–749.
- Eckles, D. L., & Schaffner, B. F. (2011). Risk Tolerance and Support for Potential Military Interventions. *Public Opinion Quarterly*, 75(3), 533–544.
- Ehrlich, S., & Maestas, C. (2010). Risk Orientation, Risk Exposure, and Policy Opinions: The Case of Free Trade. *Political Psychology*, 31(5), 657–684.
- Eidelman, S., & Crandall, C. S. (2009). Psychological Advantage for the Status Quo. In J. T. Jost, A. C. Kay, & H. Thorisdottir (Eds.), *Social and Psychological Bases of Ideology and System Justification*. Oxford, New York: Oxford University Press.
- Eidelman, S., & Crandall, C. S. (2012). Bias in Favor of the Status Quo. *Social and Personality Psychology Compass*, 6(3), 270–281.
- Enelow, J., & Hinich, M. J. (1981). A New Approach to Voter Uncertainty in the Downsian Spatial Model. *American Journal of Political Science*, 25(3), 483–493.
- Filbeck, G., Hatfield, P., & Horvath, P. (2005). Risk Aversion and Personality Type. *Journal of Behavioral Finance*, 6(4), 170–180.
- Franklin, M. N., Eijk, C. van der, & Marsh, M. (1995). Referendum outcomes and trust in government: Public support for Europe in the wake of Maastricht. *West European Politics*, 18(3), 101–117.
- Halek, M., & Eisenhauer, J. G. (2001). Demography of Risk Aversion. *The Journal of Risk and Insurance*, 68(1), 1–24.
- Henderson, A. (2014). The myth of meritocratic Scotland: political cultures in the UK. In P. Cowley & R. Ford (Eds.), *Sex, Lies and the Ballot Box: 50 things you need to know about British elections* (pp. 103–107). London: Biteback.

- Hobolt, S. B. (2009). *Europe in Question. Referendums on European Integration*. Oxford: Oxford University Press.
- Hug, S., & Sciarini, P. (2000). Referendums on European Integration Do Institutions Matter in the Voter's Decision? *Comparative Political Studies*, 33(1), 3–36.
- Johns, R. (2016). It wasn't "The Vow" wot won it: the Scottish independence referendum. In P. Cowley & R. Ford (Eds.), *More Sex, Lies and the Ballot Box: Another 50 things you need to know about elections* (pp. 185–189). London: Biteback.
- Johnston, R., Blais, A., Gidengil, E., & Nevitte, N. (1992). *Challenge of Direct Democracy: The 1992 Canadian Referendum*. Montreal: McGill-Queen's University Press.
- Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica*, 47(2), 263–291.
- Kam, C. D. (2012). Risk Attitudes and Political Participation. *American Journal of Political Science*, 56(4), 817–836.
- Kam, C. D., & Simas, E. N. (2010). Risk Orientations and Policy Frames. *The Journal of Politics*, 72(02), 381–396.
- Kam, C. D., & Simas, E. N. (2012). Risk Attitudes, Candidate Characteristics, and Vote Choice. *Public Opinion Quarterly*, 76(4), 747–760.
- Karaca-Mandic, P., Norton, E. C., & Dowd, B. (2012). Interaction Terms in Nonlinear Models. *Health Services Research*, 47(1 Pt 1), 255–274.
- Kay, A. C., Jimenez, M. C., & Jost, J. T. (2002). Sour Grapes, Sweet Lemons, and the Anticipatory Rationalization of the Status Quo. *Personality and Social Psychology Bulletin*, 28(9), 1300–1312.
- Keating, M. (Ed.). (2017). *Debating Scotland: Issues of Independence and Union in the 2014 Referendum*. Oxford, New York: Oxford University Press.
- Kowert, P. A., & Hermann, M. G. (1997). Who Takes Risks?: Daring and Caution in Foreign Policy Making. *Journal of Conflict Resolution*, 41(5), 611–637.

- LeDuc, L. (2002a). Referendums and elections. How do campaigns differ? In D. M. Farrell & R. Schmitt-Beck (Eds.), *Do Political Campaigns Matter?: Campaign Effects in Elections and Referendums* (pp. 145–162). London: Routledge.
- LeDuc, L. (2002b). Opinion change and voting behaviour in referendums. *European Journal of Political Research*, 41(6), 711–732.
- LeDuc, L. (2003). *The Politics of Direct Democracy: Referendums in Global Perspective*. Peterborough, Ont.: Broadview Press.
- Loewenstein, G. (1994). The psychology of curiosity: A review and reinterpretation. *Psychological Bulletin*, 116(1), 75–98.
- Lupia, A. (1994). Shortcuts Versus Encyclopedias: Information and Voting Behavior in California Insurance Reform Elections. *The American Political Science Review*, 88(1), 63–76.
- Lupia, A., & McCubbins, M. D. (1998). *The Democratic Dilemma: Can Citizens Learn What They Need to Know?* Cambridge: Cambridge University Press.
- MacCrimmon, K. R., Wehrung, D. A., & Stanbury, W. T. (1986). *Taking risks: the management of uncertainty*. New York: Free Press.
- McCrone, D., & Paterson, L. (2002). The Conundrum of Scottish Independence. *Scottish Affairs*, 40(1), 54–75.
- McLean, I., Lodge, G., & Gallagher, J. (2013). *Scotland's Choices: The Referendum and What Happens Afterwards*. Edinburgh: Edinburgh University Press.
- Meertens, R. M., & Lion, R. (2008). Measuring an Individual's Tendency to Take Risks: The Risk Propensity Scale. *Journal of Applied Social Psychology*, 38(6), 1506–1520.
- Morgenstern, S., & Zechmeister, E. (2001). Better the Devil You Know Than the Saint You Don't? Risk Propensity and Vote Choice in Mexico. *The Journal of Politics*, 63(1), 93–119.
- Nadeau, R., & Fleury, C. J. (1995). Gains linguistiques anticipés et appui à la souveraineté du Québec. *Canadian Journal of Political Science/Revue canadienne de science politique*, 28(01), 35–50.

- Nadeau, R., Martin, P., & Blais, A. (1999). Attitude Towards Risk-Taking and Individual Choice in the Quebec Referendum on Sovereignty. *British Journal of Political Science*, 29(03), 523–539.
- Nicholson, N., Soane, E., Fenton-O’Creevy, M., & Willman, P. (2005). Personality and domain-specific risk taking. *Journal of Risk Research*, 8(2), 157–176.
- Quattrone, G. A., & Tversky, A. (1988). Contrasting Rational and Psychological Analyses of Political Choice. *American Political Science Review*, 82(3), 719–736.
- Renwick, A. (2014). Don’t trust your poll lead: how public opinion changes during referendum campaigns. In P. Cowley & R. Ford (Eds.), *Sex, Lies and the Ballot Box: 50 things you need to know about British elections* (pp. 79–84). London: Biteback.
- Renwick, A. (2017). Referendums. In K. Arzheimer, J. Evans, & M. S. Lewis-Beck (Eds.), *The SAGE Handbook of Electoral Behaviour* (pp. 433–458). Thousand Oaks, CA: Sage.
- Riley Jr., W. B., & Chow, K. V. (1992). Asset Allocation and Individual Risk Aversion. *Financial Analysts Journal*, 48(6), 32–37.
- Roiser, J. P., Martino, B. de, Tan, G. C. Y., Kumaran, D., Seymour, B., Wood, N. W., & Dolan, R. J. (2009). A Genetically Mediated Bias in Decision Making Driven by Failure of Amygdala Control. *Journal of Neuroscience*, 29(18), 5985–5991.
- Rosen, A. B., Tsai, J. S., & Downs, S. M. (2003). Variations in Risk Attitude across Race, Gender, and Education. *Medical Decision Making*, 23(6), 511–517.
- Schneider, G., & Weitsman, P. A. (1996). The Punishment Trap Integration Referendums as Popularity Contests. *Comparative Political Studies*, 28(4), 582–607.
- Scottish Government. (2013). *Scotland’s Future. Your Guide to an Independent Scotland*. Edinburgh: Scottish Government.
- Shepsle, K. A. (1972). The Strategy of Ambiguity: Uncertainty and Electoral Competition. *American Political Science Review*, 66(2), 555–568.
- Steenbergen, M. R., & Siczek, T. (2017). Better the devil you know? Risk-taking, globalization and populism in Great Britain. *European Union Politics*, 18(1), 119–136.

- Sung, J., & Hanna, S. (1996). Factors Related To Risk Tolerance. *Journal of Financial Counseling and Planning*, 7, 11–19.
- Tomz, M., & Van Houweling, R. P. (2009). The Electoral Implications of Candidate Ambiguity. *The American Political Science Review*, 103(1), 83–98.
- de Vreese, C. H. (Ed.). (2007). *The Dynamics of Referendum Campaigns: An International Perspective*. Basingstoke: Palgrave Macmillan.
- de Vreese, C. H., & Semetko, H. A. (2004). *Political Campaigning in Referendums: Framing the Referendum Issue*. London: Routledge.
- Weber, E. U., Blais, A.-R., & Betz, N. E. (2002). A domain-specific risk-attitude scale: measuring risk perceptions and risk behaviors. *Journal of Behavioral Decision Making*, 15(4), 263–290.
- Weinstein, E., & Martin, J. (1969). Generality of willingness to take risks. *Psychological Reports*, 24(2), 499–501.
- Whiteley, P., Clarke, H. D., Sanders, D., & Stewart, M. C. (2012). Britain Says NO: Voting in the AV Ballot Referendum. *Parliamentary Affairs*, 65(2), 301–322.
- Zaleskiewicz, T. (2001). Beyond risk seeking and risk aversion: personality and the dual nature of economic risk taking. *European Journal of Personality*, 15(S1), S105–S122.
- Zaller, J. R. (1992). *The Nature and Origins of Mass Opinion*. Cambridge: Cambridge University Press.
- Zuckerman, M. (1979). *Sensation Seeking: Beyond the Optimal Level of Arousal*. Taylor & Francis Group.
- Zuckerman, M., & Kuhlman, D. M. (2000). Personality and Risk-Taking: Common Bisocial Factors. *Journal of Personality*, 68(6), 999–1029.

Appendix

TABLE A1 HERE

FIGURE A1 HERE