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Shaping voting intentions:

An experimental study on the role of information in the  
Scottish independence referendum

Davide Morisi



European University Institute  
**Robert Schuman Centre for Advanced Studies**  
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EUI Working Paper **RSCAS** 2014/88

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## **Abstract**

In a context of expanded media choice, understanding how voters select and interpret information to make voting decisions acquires substantial relevance. Drawing on former research in political psychology and political behaviour, the present study explores how provision of information affects voting intentions in the context of the Scottish independence referendum, by adopting a between-subjects experimental design.

Results show that provision of information a) reduces indecision about how to vote, especially when voters are able to select the arguments to read; b) increases the likelihood to vote Yes, especially when voters are confronted with a balanced set of arguments; c) interacts with individual-level elements and increases the likelihood to vote Yes especially among those who are more politically active and more emotionally involved in the issue of independence. Provision of information also slightly increases the likelihood to vote No, but this occurs in general only when voters are able to select the arguments to read and in very few sub-groups.

At the theoretical level, results provide further evidence supporting the mechanism of selective exposure and the occurrence of a 'prior attitude effect', but contradict the general tendency in the literature to interpret these mechanisms as unidirectional. The findings of the experiment reveal that effects of information are not linear since voters react differently to the provision of the same arguments, thus highlighting the need to take into account individual-level mediating factors, such as the level of indecision about how to vote.

## **Keywords**

Political behaviour - Public opinion - Voting intentions - Referendum campaigns - Scottish referendum - Experimental methods - Selective exposure





## 1. A double-edged sword\*

Making voting decisions often proves far from an easy task. When the issues at stake are high and party lines are blurring – such as in the case of a heated referendum – putting a simple cross on a Yes or No requires careful reasoning and vast cognitive engagement. The same amount of cognitive resources is needed to gather convincing evidence to support and justify one's stance at the moment of voting. Although the increased availability of information in the current media environment has boosted the possibilities to *search* for evidence, on the other hand, it has also enhanced the possibilities to *find* evidence in line with pre-existing opinions. A wider choice of information turns out to be a double-edged sword: while citizens can now broaden their views by consulting a wider menu of options, they can also pick the dish that perfectly suits their taste.

Within this context, asking how citizens select and evaluate information when they make voting decisions proves far from a trivial question. If confronted with choice, do they benefit from the possibility to broaden their views or, on the contrary, do they selectively expose themselves to confirmatory evidence? If stimulated to consider a balanced set of options, do they make considered judgments or do they still show a degree of biased reasoning? Motivated by these broad questions, together with Céline Colombo in May 2014 I conducted an experimental study at BLUE Lab at the University of Edinburgh, with the aim to provide evidence on the causal effects of provision of information on voting intentions at the Scottish independence referendum. The choice of this particular referendum derives from a series of contextual factors – such as the saliency of the issue, the relevance of the outcome of the vote, and the significant degree of both polarisation and indecision in the electorate – which makes it a particularly suitable case study for this type of analysis. Based on a between-subjects design, the experiment explores the link provision of information and voting intentions at the group level by comparing the differences between a control group – in which subjects report their voting intentions *before* reading a set of texts – and two treatment groups – in which voting intentions are provided *after* reading a set of texts.

## 2. Theoretical framework

The question of how citizens form their opinions in the context of political campaigns has been widely explored in political science, dating back from the seminal works of Lazarsfeld et al. (1944), Campbell et al. (1960) and Converse (1962; 1964). Current changes in both the political and the media environment have prompted a new wave of research aiming to understand how citizens form their political opinions when confronted with new information.

These studies have acquired a particular relevance within the debate on deliberative democracy (for a review see Delli Carpini, 2004), building on early theorists' ideas (see for example Fishkin, 1995, and Habermas, 1996) that communicative processes based on reasoned arguments and rational discussions should lead citizens to convergence to consensual decisions and reach better outcomes for the entire society. However, normative ideas of deliberation have often been contradicted not only by the outcome of electoral processes, but also by the occurrence of different phenomena which undermine the very foundations of deliberation. One of these particular phenomena consists of opinion polarization, which, in certain circumstances, has been shown to occur as the outcome of a deliberative setting (Sunstein, 2000; 2002; 2006), in direct contrast with the desired goal of convergence of opinions.

In the context of electoral campaigns, Zaller's (1992) analysis provides an essential framework to understand how citizens form their political opinions in relation to the information they receive. In

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\* The experiment was made possible thanks to the financial support of the EUI SPS Department and the EUI Presidency.

addition to factors such as party identification or ideological orientation, Zaller's model assigns a crucial role to individuals' level of political awareness and their predispositions. According to the so-called 'Reception' and 'Resistance' axioms, people with a higher level of political awareness are more likely to comprehend political messages, while, at the same time, they tend to resist arguments that are inconsistent with their predispositions (Zaller, 1992: 42-48).

At the root of Zaller's cognitive model lies the assumption that political predispositions fundamentally drive the reception of new information, thus leaving little room for opinion change especially when information is delivered in the form of 'cueing messages'<sup>1</sup>. However, if this assumption proves true, provision of information should acquire more relevance in all the instances in which voters either have weak political predispositions or are uncertain about their voting intentions. Such a scenario fits especially the case of referendum campaigns contrary to general election campaigns, for two general elements. Firstly, as argued by de Vreese and Semetko (2004: 4), "given that referendums are held on a specific issue, the learning process about the issue is critical for voters' understanding of the options". This issue-based character contributes to shifting the debate more on the substance of the arguments than on the personality of the candidates, thus increasing the relevance of providing voters with convincing evidence.

Secondly, voters' learning process is driven more by the substance of information also as a consequence of the weaker role played by party cues. "In a referendum campaign, in contrast to a general election campaign where political parties provide relatively clear-cut information cues for voters, the information cues from political parties are often ambiguous" (de Vreese, 2007: 1). The reason for this ambiguity stems from the fact that referendum issues often crosscut traditional party cleavages, forcing parties to take positions which can be in line with their opponents, as in the case of pro-union parties in Scotland<sup>2</sup>.

### ***2.1. Two mechanisms of belief updating***

At the root of the relationship between predispositions and information processing, lies a series of cognitive and motivational mechanisms which have been explored especially in social and political psychology. Two mechanisms which help understand how individuals develop their voting intentions after learning from new evidence have been tested in this experiment.

The first one concerns selective exposure to opinion-reinforcing information. According to Festinger's (1957) theory of cognitive dissonance, when individuals find themselves in a state of dissonance – such as in the case of reading an article which challenges pre-existing beliefs – they can reduce this dissonance by seeking out additional evidence which reinforces their pre-existing beliefs<sup>3</sup> and, at the same time, by avoiding the type of evidence which puts these beliefs into question. After the development of the theory of cognitive dissonance, several studies have attempted to demonstrate whether and to what extent individuals engage in selective exposure (for a review, see Sears and Freedman, 1967; Cotton, 1985; Stroud, 2011). However, notwithstanding a numerous amount of studies, "the empirical status of selective attention and, in particular, selective exposure can best be characterized as uncertain", as argued by Taber and Lodge (2006: 756). Providing further evidence on the occurrence of selective exposure, therefore, represents one of the theoretical aim of this study.

A second mechanism which explains how individuals update pre-existing beliefs after receiving new information refers to the so-called phenomenon of 'biased assimilation'. In a seminal

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<sup>1</sup> "Cueing messages ... consist of 'contextual information' about the ideological or partisan implications of a persuasive message" (Zaller, 1992: 42).

<sup>2</sup> Both the Conservative and the Labour party belong to the pro-union coalition, even if they are historically political opponents.

<sup>3</sup> This mechanism has also been labelled as a confirmatory bias (for a review see Nickerson, 1998).

experimental study, Lord, Ross and Lepper (1979) tested whether and how subjects changed their attitudes on the issue of death penalty after reading a balanced set of arguments in favour and against the efficacy of this measure. Their results clearly indicate that “the net effect of exposing proponents and opponents of capital punishment to identical evidence ... was to increase further the gap between their views” (Lord, et al., 1979: 2015), thus, instead of changing opinions, subjects rejected arguments which challenged their pre-existing views – a so-called disconfirmation bias (see Taber and Lodge, 2006: 757) – and became even more extreme in their pre-existing opinions. The occurrence of biased assimilation of information has been subsequently confirmed but only under certain conditions depending on a) the type of topics (Munro and Ditto, 1997), b) the level of subjects’ extremity of opinions (Miller et al., 1993), c) attitude-accessibility (Houston and Fazio, 1989), and d) self-esteem (Cohen et al., 2000).

### **3. Research questions and case study**

The present study starts with a very broad question: what is the effect of information on voting intentions in a referendum campaign? Does provision of information reinforce individual predispositions or does it lead to a change in voting intentions? Drawing on the brief theoretical framework summarised above, both the mechanisms of selective exposure and biased assimilation, in addition to the role played by political predispositions, suggest that individuals tend to use new evidence to reinforce instead of challenging pre-existing beliefs. The question, therefore, is whether and under which circumstances provision of information can succeed in changing voting intentions. In a highly polarized environment – such as the heated campaign for the Scottish independence referendum – how can the Yes and the No camps manage to convince new voters if individuals filter new arguments through solid predispositions? As specified in the research hypotheses (see par. 5), the possibility for information to affect voting intentions seems to depend on the interaction between general mechanisms of information processing and the ‘strength’ of individuals’ pre-existing voting intentions.

#### **3.1. Case study**

As a case study this research focuses on one of the currently most heated referendum campaigns, namely the campaign for the Scottish independence referendum, which is going to be held on 18<sup>th</sup> September, 2014. Since the date of the referendum was announced – almost one year and a half in advance – the implications of an independent Scotland have been widely discussed in the media and in the political environment.

There is no doubt that this is a salient issue, as confirmed by the high level not only of media coverage, but also of citizens’ involvement. According to several polls conducted over at least one year, a stable, wide majority of citizens declare that they are likely or very likely to go to vote<sup>4</sup>. In addition, recent surveys show that the electorate is fairly polarized in two factions, with a slight majority of voters who intend to vote No. According to the polls conducted since January 2014, the pro-union side attracts between 40 and 55 per cent of the voting intentions, while pro-independence voters fluctuate between 30 and 45 per cent. The percentage of undecided voters also continues to remain relevant, ranging from 7 to 27 percent depending on the polls conducted in the period between 1<sup>st</sup> June and 15<sup>th</sup> August 2014<sup>5</sup>.

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<sup>4</sup> The percentage of citizens who declare that would definitely go to vote has been steadily above 70 percent in all the polls conducted since January 2014. Source: [whatscotlandthinks.org](http://whatscotlandthinks.org).

<sup>5</sup> Data based on a collection of different surveys available on [whatscotlandthinks.org](http://whatscotlandthinks.org).

## 4. Design

A basic way to experimentally study the effect of information on voting intentions relies on sequential within-subjects designs (see Morton and Williams, 2010). In the field of public opinion studies, the experiment carried out by Taber and Lodge in 2006 provides a key reference point. In this study the same subjects were presented with a series of attitude batteries before and after reading a set of texts on affirmative action and gun control.

Although within-subjects designs have some advantages in practical and theoretical<sup>6</sup> terms, they encounter three main problems. Firstly, learning issues cannot be entirely ruled out. Even if the experiment lasts for a short period of time, “the fact that subjects have experienced a previous state of the world might affect their choices in a subsequent stage as they learn about the choice process” (Morton and Williams, 2010: 92). Secondly, although the direction of causality seems undisputed, in practice this design “is often vulnerable to confounds – meaning unintended and uncontrolled factors that influence the results” (Druckman et al., 2011: 18). Thirdly, the most relevant problem with the application of this design in the field of public opinion refers to anchoring and consistency reasons. According to the literature on decisional heuristics (see Kahneman, et al. 1982), the ‘anchoring and adjustment’ heuristic can lead to biased evaluation of evidence, because “prior beliefs serve as a cognitive anchor that impedes appropriate and efficient updating based on new information” (Levy, 2013: 310). As a consequence, in a within-subjects design subjects might fail to update their beliefs because their post-treatment response is anchored to the pre-treatment response.

For all these reasons, I decided to rely on a between-subjects design, in which all these confounding factors can be ruled out as a consequence of subjects’ random assignment to treatments. This type of design represents a methodological innovation in this field of research, and even if it reduces the possibility to explain treatment effects at the individual level, it nevertheless allows to find robust effects at the aggregate level. Thus, the effects of information will be analyzed at the group level, by comparing the differences between a control group, in which subjects provide their voting intentions *before* reading a set of texts, and two treatment groups, in which subjects provide their voting intentions *after* reading a set of texts. Voting intentions in the control group function as a baseline against which to measure the differences in the voting intentions in the treatment groups.

### 4.1. A lab experiment

The experiment was conducted at BLUE Lab at the University of Edinburgh. In total, 296 subjects took part in the study which lasted for five days, from 28<sup>th</sup> April until 2<sup>nd</sup> May 2014. The choice of BLUE Lab guaranteed that all subjects in the pool were eligible to vote in the referendum, since only those who are resident in Scotland can go to the polls<sup>7</sup>. Each session lasted around 45 minutes, divided between 15-20 minutes to reading a set of texts and other 20-25 minutes to replying to a battery of questions. A web-interface was used as a software<sup>8</sup>, meaning that the same study could have been conducted also online. However, both the extensive length of the experiment and the need to guarantee that subjects focused as much as possible on the tasks made the choice of the lab the only feasible solution.

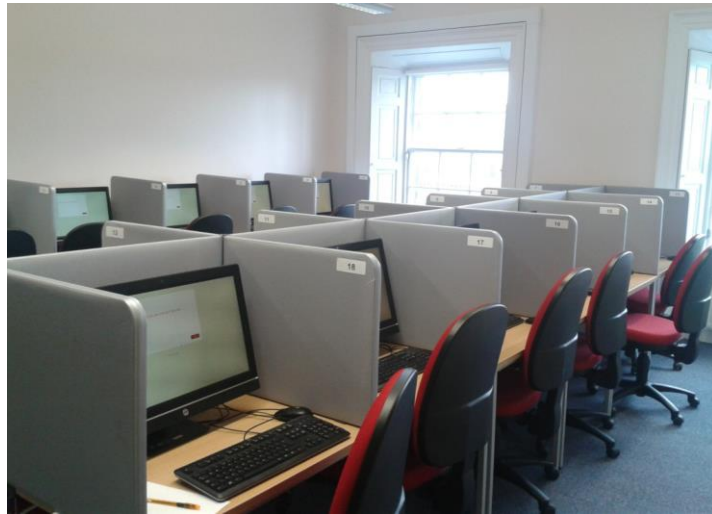
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<sup>6</sup> In practical terms, within-subjects designs allow to double the number of observations on the dependent variables without increasing the number of subjects. In addition, they allow to detect treatment effects at the individual level, since observations are taken before and after the treatment for each single subject.

<sup>7</sup> The eligibility criteria include British, European and Commonwealth citizens who are resident in Scotland at the time of the referendum. In addition, the minimum voting age has been lowered to 16 years. For all the details, see the “Scottish Independence Referendum (Franchise) Act 2013”.

<sup>8</sup> The software adopted was Qualtrics.

**Figure 4.1. An image of BLUE Lab at the University of Edinburgh**



#### ***4.2. Design of the study***

The experiment included one control group and four treatment groups, with around 60 subjects per groups. The following analysis, however, will focus exclusively on 3 groups<sup>9</sup> (a control group and two treatment groups) accounting for a total of 176 subjects.

As summarized in table 4.1, the design was structured in five main parts. At the very beginning three general questions were presented to all participants regarding their likelihood to go to vote, their certainty about their vote intention – i.e. whether they had already decided how to vote, without however asking whether they wanted to vote Yes or No – and the importance they attributed to the issue of independence.

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<sup>9</sup> The other two treatment groups have been analyzed in another study by Céline Colombo, the co-author of the experiment.

**Table 4.1. Summary of the design**

Part	Control group (CG)	Treatment group 1 (TG1) Selection of information	Treatment group 2 (TG2) Balanced information
1	Pre-treatment questions (likelihood to vote / certainty of vote intentions / personal relevance of issue of independence)		
(CG only)	Outcome measures (opinions and voting intentions)		
2	Demographics / Political knowledge		
(CG only)	Questions on media, economy, politics, etc.		
3	Reading task		
	(same task as TG1)	Treatment Subjects select and read 8 texts from a group of 16 texts (8pro + 8con)	Treatment Subjects read a fixed set of 8 texts (4pro + 4con) presented in a random way
4		Outcome measures (opinions and voting intentions)	
5		Questions on media, economy, politics, etc.	

In the second part all subjects replied to a set of standard demographic questions, followed by a short battery of knowledge questions on basic facts related to UK politics and the referendum (e.g. the eligibility criteria, the position of the main political parties regarding independence, etc.).

Part three includes the treatments which consist of different reading tasks. In treatment group 1 (TG1), subjects were firstly presented with a random list of 16 headlines corresponding to 8 texts pro independence and 8 texts against independence, as shown in figure 4.2. After selecting one headline, the corresponding text appeared on the screen. Once they finished reading the text, they had to select another headline and repeat the same task until they read 8 texts out of the total 16. At each stage, the presentation of the headlines was randomized in order to avoid priming effects. Subjects in the control group (CG) also performed the same task as in TG1, with the crucial difference that they had already provided their voting intentions in the previous steps. Allowing also subjects in the control group to read the texts was designed with the aim to test part of the mechanism of selective exposure, which assumes that individuals tend to select information in line with their pre-existing opinions.

**Figure 4.2. A screen-shot of the first list of headlines in treatment group 1**

**1. Please select a first headline corresponding to an article you would like to read**

- ☐ CON - Leaving the UK would threaten Scotland's research funding and kill off free tuition fees
- ☐ PRO - Scotland's healthy public finances will make Scots better off independent
- ☐ PRO - Energy-rich Scotland would be wealthier as an independent state
- ☐ PRO - Under independence Scotland will gain a stronger role in the EU
- ☐ CON - As part of the UK today Scotland has the best of both worlds
- ☐ PRO - Independence will mean fairer and more equal Scotland
- ☐ PRO - Independent Scotland's universities would avoid funding cuts and gain a stronger reputation
- ☐ CON - The only way to keep the pound is staying in the UK
- ☐ PRO - Young people have most to gain in building a future on independence
- ☐ PRO - With a Yes vote Scotland's future will be in Scotland's hands
- ☐ CON - Breaking the UK single market puts Scottish business at risk and may cost many jobs
- ☐ PRO - Only independence can guarantee a nuclear-weapons-free Scotland
- ☐ CON - Defence and security will be diminished by independence
- ☐ CON - A No vote means continuing the success story of Scottish devolution
- ☐ CON - Scots worse off? Tax hikes and spending cuts will be cost of independence
- ☐ CON - An independent Scotland would face a mountain of problems to be part of the EU

In treatment group 2 (TG2) subjects did not have the possibility to select any headline, but simply had to read 8 texts – 4 pro and 4 against independence – presented sequentially in random order. This set of 8 texts was a selected subgroup of the 16 texts provided to both TG1 and CG.

Straight after reading the texts, subjects in the treatment groups were presented with the battery of outcome measures, which included the question on their voting intentions at the referendum<sup>10</sup>. The same battery of questions was presented to the control group before reading the texts.

Finally, the fifth part included a set of questions related to media use, perception of economy, political participation, party identification, trust and a few other questions.

#### **4.3. The information material**

The material provided in the treatment was carefully designed after conducting a content analysis of the main Scottish and British daily newspapers in the period between September 2013 and April 2014. Besides these media outlets, a wider range of sources was also taken into account, including online news websites, campaign websites, political statements, policy and academic reports<sup>11</sup>. Subjects, therefore, did not read any fictional arguments, but only publicly available pieces of information linked to the most discussed topics in the debate on Scottish independence. A pre-test was also conducted to test the strength of each argument and subsequently drop the weakest ones.

<sup>10</sup> The exact wording of the question was the following: "If the referendum were hold tomorrow, how would you vote in response to the question 'Should Scotland be an independent country?'". Possible answers included Yes, No, Undecided, Would not vote.

<sup>11</sup> The SNP's white paper on Scottish independence was an important source of arguments in favour of independence.

All the texts were equally long (around 200 words) and were presented in the most neutral way, without any pictures and any ‘label’, meaning that there was no reference to any source<sup>12</sup>. In addition, references to political parties, organizations, or specific persons – such as politicians, journalists or experts – were completely omitted<sup>13</sup>. All these adjustments were adopted to identify the effect of ‘pure’ content of information, by removing any sort of confounding effects deriving from cueing – such as party-cueing or newspaper-cueing. Subjects, therefore, were induced to consider only the content of the texts and form opinions based on the substance of the arguments.

#### **4.4. The subject pool**

As illustrated in the graphs in appendix, the pool is composed almost entirely by students, with the exception of 17 subjects who were not enrolled in any university programme at the time of the experiment. Females are significantly more represented than males, accounting for almost two thirds of the pool. Almost three quarters of the subjects are aged between 20 and 24 years, in addition to 8 percent of very young subjects aged 16-19 (since the minimum age to be eligible to vote at the referendum is 16). A remaining eleven percent is aged 25-30, and only 8 percent are older than 30. A quarter of the pool has moved to Scotland very recently (i.e. since either 2013 or 2014), while only another quarter has been living in Scotland for more than 10 years.

With regards to the identity of the subjects, 20 percent were born in Scotland, but only half of them describe themselves as either “Scottish not British” or “More Scottish than British”, while just above a third feels equally Scottish and British. On the contrary, almost all the subjects who were born in the rest of the UK (around 30 percent of the pool) feels either “More British than Scottish” or “British not Scottish”, thus suggesting a stronger link between the British identity and the country of birth, compared to the case of the Scottish identity. The other half of the pool was born outside of the UK and does not identify in any of the Scottish/British categories.

Besides demographic variables, the distributions of the three pre-treatment questions on likelihood to vote, personal relevance and certainty of vote are also worth summarising. In statistical terms, the distribution of these three variables does not differ significantly across groups, confirming that randomization has worked well.

With regards to the likelihood to vote, subjects on average are fairly likely to go to vote. On a scale of 0 (certain not to vote) to 10 (absolutely certain to vote), the average score is 7. Only 6 percent state that they are certain not vote, while around a third is certain to go to vote. Similar results apply to the personal relevance of the issue of Scottish independence. In this case, subjects were asked “How much do you personally care about the issue of Scottish independence?”. On a 0 (“Do not care at all”) to 10 (“Absolutely care”) scale, the average personal relevance is fairly high with a score of 7, with around 20 percent of subjects who say that they absolutely care about Scottish independence.

Finally, in the case of certainty of how to vote, subjects had to choose between four options, ranging from having definitely decided how to vote to not having made any decision<sup>14</sup>. Those who said that they will certainly not vote were excluded from this question. In total, a significant part of the pool is still uncertain about how to vote, with 40 percent of very undecided subjects and 30 percent

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<sup>12</sup> According to Iyengar and Hahn (2009), labeled news are more appealing than anonymous news reports. The presence of a label has significant effects in news selection based on partisanship.

<sup>13</sup> According to Hobolt et al. (2011), mentioning a source of information affects information processing, especially in the case of less credible sources which are ignored, instead of taken into consideration.

<sup>14</sup> The exact wording of the question was the following: “Which of the following statements best applies to you and how you intend to vote in the referendum on Scottish independence?”. Possible answers: “I have definitely decided how I will vote and will not change my mind (1) / I have almost decided how I will vote, but I may still change my mind (2) / I have an idea of how I will vote, but I have not yet made a final decision (3) / I have not made any decisions about how I will vote (4)”. NB: The question was not presented to those who previously said that they will certainly not vote.



who might change their mind. Only 30 percent of the pool has definitely decided how to vote. Such a scenario seems therefore particularly suitable for information to have an effect on voting intentions, in line with the following hypotheses.

## **5. Research hypotheses**

Drawing on the theoretical framework, three sets of hypotheses can be derived. The first group concerns general mechanisms of processing and selecting information, which are supposed to work irrespective of the specific tasks of the experiment. Building on the study conducted by Taber and Lodge (2006: 757), the first two general hypotheses assume that:

*H1A. A prior attitude effect: subjects – even when encouraged to be objective – evaluate arguments in line with their voting intentions as stronger than opposing arguments.*

*H1B. Selective exposure: when free to choose which information to be exposed to, subjects tend to select arguments in line with their voting intentions.*

These hypotheses lie on the necessary assumption that individuals have pre-existing voting intentions before reading the information material provided in the experiment. This is not so obvious, however, in a context where a relevant share of voters is still undecided, as in the case of the Scottish referendum. The strength of the mechanisms in H1A and H1B, therefore, depends on the interaction with the individuals' pre-existing degree of decision about how to vote. The level of decision can be interpreted partially as a proxy for the strength of individuals' predispositions, in line with Zaller's (1992) model. It follows that:

*H1C. The more undecided the subjects – or the 'weaker' their voting intentions – the lower the prior attitude effect and the lower the tendency to selective exposure, and vice versa.*

The second group of hypotheses focus on the *effect* of information, which can be defined as a change in voting intentions resulting from a shift either from a condition of indecision to a condition of decision (irrespective from the actual decision of voting) or from an intention to vote Yes to an intention to vote No and vice versa. As already mentioned above, the combination of prior attitude effects and selective exposure runs against the idea that provision of information can impact on voting intentions, unless subjects are undecided. Following H1C, it follows therefore that:

*H2A. The more undecided the subjects, the higher the effect of information on voting intentions, and vice versa.*

Since subjects perform different tasks in the treatment groups, the effect of information should also differ between the groups. In particular, in line with the mechanism of selective exposure, it can be assumed that:

*H2B. The possibility to select (TG1) helps subjects reinforce pre-existing voting intentions, thus reducing indecision but also the likelihood to change voting intentions more than in a situation in which a balanced set of arguments is presented (TG2).*

In other words, subjects in TG1 are expected to be less undecided, but also less likely to switch their voting intentions after reading the arguments compared to subjects in TG2. However, as a consequence of H1C, when subjects are not sure about their voting intentions they also lack the incentive to engage in selective exposure, thus undecided voters in both treatment groups should react to provision of information in a similar way.

*H2C. The more undecided the subjects, the lower the likelihood to engage in selective exposure, thus the more similar the effect of information on voting intentions in the treatment groups.*

In sum, these two sets of hypotheses suggest that provision of information can affect voting intentions mostly when individuals are undecided, and especially when they are forced to consider opposite arguments. On the contrary, when they are free to choose which arguments to read, people tend to select information in line with their voting intentions, thus achieving the benefit of reducing indecision, but at the expense of not putting pre-existing ideas into question.

Before proceeding with the results, a final set of assumptions needs to be introduced with regards to the specific case of the Scottish referendum. In the majority of referendums, voters are confronted with an ‘unbalanced’ binary option between changing the current situation (voting Yes) or maintaining the status quo (voting No). Following Kriesi’s (2005: 138) analysis, the strategy of those who vote No can be interpreted on the basis of the *status quo heuristic*. According to this heuristic, those who choose the status quo they do it essentially because they are afraid of the risks related to changing the current situation into an unknown scenario. If voting Yes implies a radical change in the constitution of a country – from being a part of a bigger state to becoming an independent state as in the case of Scotland – it is clear how risky this option would be and how imbalanced is the choice between voting Yes or No. It can be argued, therefore, that choosing the pro-independence side requires a higher level of political and/or emotional involvement compared to maintaining the status quo. In other words, in the Yes camp the share of ‘active’ voters is supposed to be higher than in the No camp.<sup>15</sup> On the other hand, it can be assumed that the No side attracts a higher percentage of voters who are less involved in the debate and less politically active.

Within this context, it is reasonable to assume that the reception of new evidence depends on individuals’ predispositions, in particular on voters’ degree of political and emotional involvement. In particular, given the imbalance between choosing Yes or No, provision of information should affect voting intentions in a non-linear way, as specified in the following hypotheses:

*H3A. Provision of information increases the likelihood to vote Yes especially among those who are more politically active and more emotionally involved in the issue of independence; and conversely*

*H3B. provision of information increases the likelihood to vote No especially among those who are less politically active and less emotionally involved in the issue of independence.*

## 6. Results

### 6.1. A prior attitude effect

After reading each text, subjects were asked to rate the strength of the arguments contained in the texts on a scale from 0 (extremely weak) to 10 (extremely strong)<sup>16</sup>. In addition, they were explicitly asked to keep their opinions separated from the rating, in order to provide an ‘objective’ evaluation of the arguments. Yet, notwithstanding this explicit request, results show that the rating of the arguments is strongly correlated with subjects’ voting intentions: those who intend to vote Yes consider pro arguments more convincing than con arguments, and vice versa (i.e. those who intend to vote No consider con arguments more convincing than pro arguments). The graph below illustrates this finding

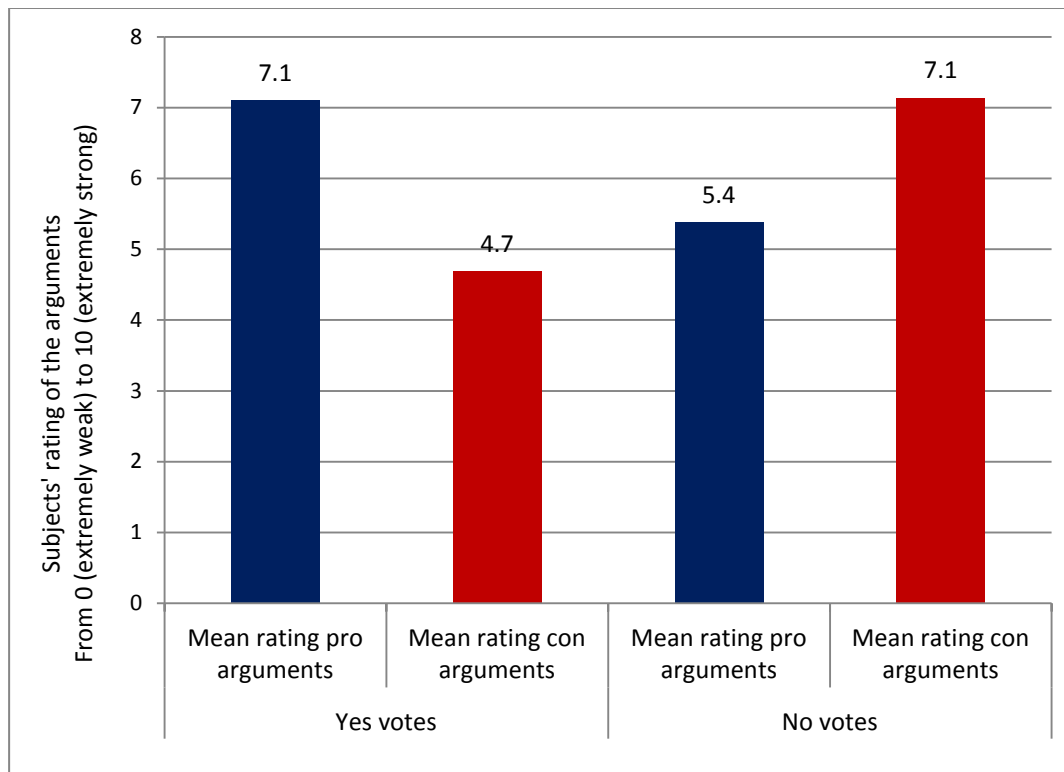
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<sup>15</sup> This does not necessarily imply, however, that more active voters are also more likely to vote Yes. People who are more involved in politics are also more likely to be aware of the consequences of a Yes vote, thus they might indeed choose to vote No after a careful consideration of the arguments brought forward by both sides.

<sup>16</sup> The question was worded as follows: “How weak or strong do you believe the argument contained in this text is? Please note: we want to know how weak or strong you believe the argument is, *not whether you agree or disagree with the argument.*”

at the aggregated level, but the same pattern applies also at the group level as shown in figure 3 in appendix.

**Figure 6.1. Evaluation of the arguments by voting intentions**



These findings confirm the first hypothesis (H1A) and provide further evidence in favour of what has been labelled as a ‘prior attitude effect’ (Taber and Lodge, 2006; Druckman et al., 2012), meaning that individuals “view evidence consistent with prior opinions as stronger” (Druckman et al., 2012: 432). It is worth underlying that this pattern occurs not only in the groups where subjects can select information (CG and TG1), but also in treatment group 2 where everyone reads exactly the same information material. A t-test confirms that these differences in the ratings are statistically significant both at the sample level (all groups) and at each treatment-group level. In addition, a regression analysis reveals a strong correlation between the gap in the ratings and voting intentions after controlling for several factors (see table 1 in appendix), meaning that as the rating of pro-independence arguments increases compared to the rating of opposite arguments, the likelihood to vote Yes increases accordingly, and vice versa.

Furthermore, these findings contribute to the existing literature by making clear that these effects do not occur simply for consistency reasons as a ‘by-product’ of within-subjects designs, since they can be found not only in the control group (in which subjects rate arguments after stating their voting intentions) but also in the two treatment groups (in which the rating is given before stating voting intentions). It is important to underline, however, that, although these results confirm the existence of a strong correlation between the evaluation of evidence and voting intentions, they cannot prove the occurrence of a causal relation. Indeed, the causal arrow is very likely to work in both directions: those who intend to vote Yes or No evaluate information accordingly, but also those who give more weight to pro or con arguments intend to vote accordingly.

## 6.2. Selective exposure to information

The majority of the subjects in the control group and treatment group 1 (61%) select a balanced set of arguments with 4 arguments pro and 4 arguments con, while the remaining 39% select an unbalanced set with at least one more argument on either the pro or con side. However, among these subjects only 8% (9 subjects) select a very unbalanced set with either 6 arguments con and 2 pro or vice versa. A balanced selection of arguments might have been induced by the fact that among the entire set of 16 arguments, 12 of them consisted of ‘paired’ arguments on different issues related to independence – e.g. a text stating why in an independent Scotland universities would be more prosperous and an opposite text stating why universities would benefit more from remaining part of the UK.

Results show (weak) evidence in favour of selective exposure, in line with H1B. As summarized in table 6.1, those who read more arguments against independence are more likely to vote No and less likely to vote YES compared to those who read more arguments in favour of independence, and the opposite correlation applies. These differences, however, are statistically significant only for the differences in No votes.

**Table 6.1. Voting intentions by selection of arguments (control group and treatment group 1 combined)**

	1. Reading more CON than PRO arguments		2. Balanced selection		3. Reading more PRO than CON arguments	
	Yes vote	No vote	Yes vote	No vote	Yes vote	No vote
<i>CG + TG1</i> ( <i>N</i> )	17.85% (5)	78.57% (22)	23.94% (17)	46.48% (33)	33.33% (6)	55.55% (10)
<i>Difference</i> <i> Group 1 - Group 3 </i>	15.47	23.01  *			15.47	23.01  *

P-values for two-tailed t-test: \* =  $p < 0.1$ , \*\* =  $p < 0.05$ , \*\*\* =  $p < 0.01$

Table 6.2 also confirms that those who intend to vote Yes are more likely to select more arguments in favour of independence, and vice versa. This is another evidence in favour of selective exposure, although these differences are small and not statistically significant.

**Table 6.2. Selection of the arguments by voting intentions (control group and treatment group 1 combined)**

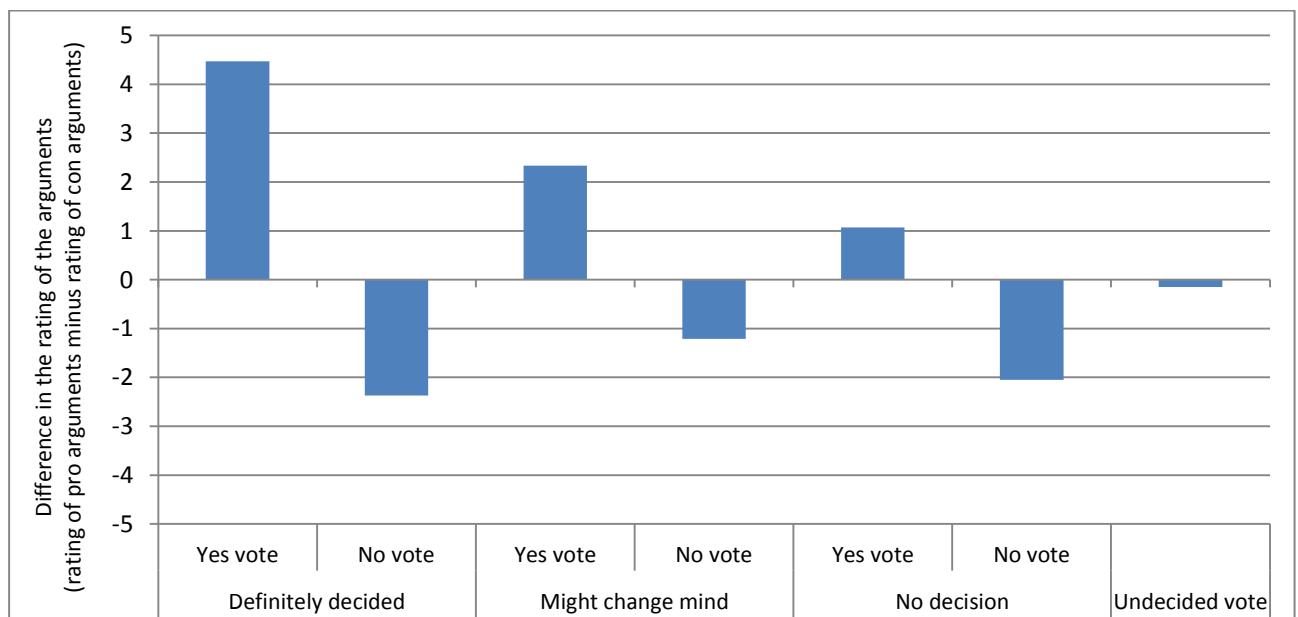
Selection of the arguments	Voting intentions	
	Yes	No
1. More CON than PRO arguments	17.9%	33.8%
2. Balanced selection	60.7%	50.8%
3. More PRO than CON arguments	21.4%	15.4%
<i>Total</i>	<i>100%</i> (28)	<i>100%</i> (65)

## 6.3. The mediating role of predispositions

The effects underlined so far need to be tested in relation to the strength of subjects pre-existing voting intentions. Following the third general hypothesis (H1C), it can be assumed that those who are still uncertain about how to vote should react differently to provision of information.

The following graph illustrates a correlation between the level of subjects' decision and the differences in the rating of the arguments. It shows in particular that the gap in the rating decreases as subjects become more undecided in their voting intentions. In other words, the more uncertain the subjects are, the more they tend to evaluate arguments in an even-handed way, especially in the case of those who intend to vote Yes. These differences are statistically significant at all decision levels, apart from the case of those who are truly undecided about their voting intention (last column in the graph; see also table 2 in appendix). Thus, in line with H1C, data confirm that the prior attitude effect becomes smaller as the level of indecision increases, since subject become more likely to give an equal weight to opposite arguments.

**Figure 6.2. Difference in the rating of the arguments by decision on how to vote and voting intentions (all groups)**



NB: The higher the number, the higher the rating of pro arguments compared to con arguments, and vice versa. The scale ranges from -10 (maximum rating of con arguments and minimum rating of pro arguments) to +10 (maximum rating of pro arguments and minimum rating of con arguments).

The mediating role of the degree of decision is evident also in the case of selective exposure. Figures in table 6.3 reveal a clear pattern: the more subjects are decided about how vote, the more they select information in an unbalanced way in line with their pre-existing voting intentions. On the contrary, as the level of indecision increases, subjects are more likely to be even-handed and select a balanced set of arguments. This pattern further confirms that individuals tend to seek out evidence which reinforces their predispositions – confirming the mechanism of selective exposure – but they do so only to the extent that they hold sufficiently strong predispositions. When they either lack solid predispositions or are still undecided, they tend to choose information in a balanced way, thus suggesting that they will decide how to vote only after a careful evaluations of the arguments from both sides.

**Table 6.3. Selection of the arguments by voting intentions and decision levels  
(control group and treatment group 1 combined)**

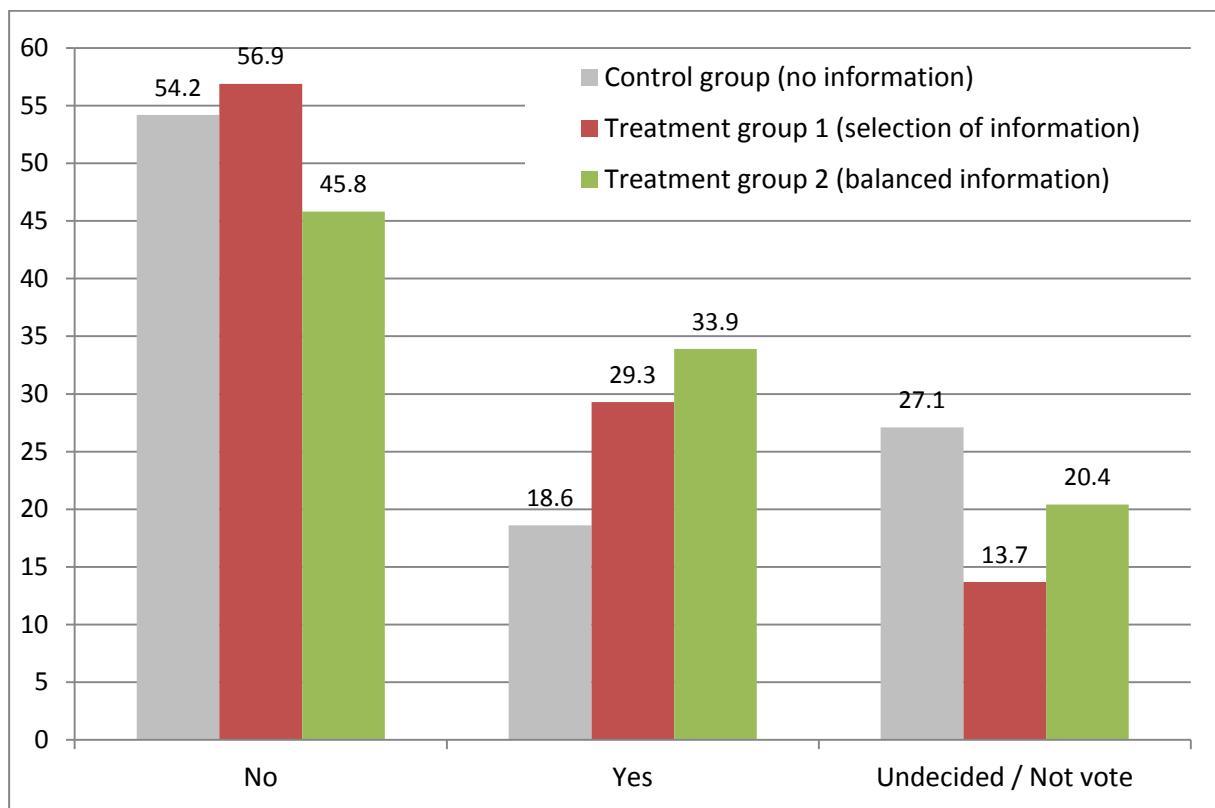
<i>Selection of the arguments</i>	Definitely decided how to vote		Might change mind		No decision		Undecided vote
	Yes vote	No vote	Yes vote	No vote	Yes vote	No vote	
1. More CON than PRO arguments	14%	44%	12.5%	35%	9%	15%	6%
2. Balanced selection	<b>43%</b>	<b>32%</b>	<b>62.5%</b>	<b>48%</b>	<b>82%</b>	<b>85%</b>	<b>88%</b>
3. More PRO than CON arguments	43%	24%	25%	17%	9%	0	6%
<i>Total</i>	<i>100%</i> <i>(7)</i>	<i>100%</i> <i>(25)</i>	<i>100%</i> <i>(8)</i>	<i>100%</i> <i>(23)</i>	<i>100%</i> <i>(11)</i>	<i>100%</i> <i>(13)</i>	<i>100%</i> <i>(16)</i>

#### **6.4. Effects of information on decision to vote and voting intentions**

Moving to the analysis of the treatments, results summarized in the table and graph below reveal two general effects of provision of information on voting intentions. Firstly, the possibility to read arguments either in favour or against independence reduces indecision about how to vote at the referendum. This effect is stronger and statistically significant when subjects are able to select information, confirming the research hypothesis H2B. More specifically, the possibility to select information reduces the percentage of undecided subjects by half and consequently increases their likelihood to choose either the Yes or No option.

Secondly, the effects on voting intentions are more substantial and statistically significant only in the case of Yes votes. Provision of information increases the likelihood to vote Yes by 10 to 15 percentage points depending on the group, as summarized in table 6.4. This effect is stronger when subjects are confronted with a balanced set of arguments (TG2). According to the hypotheses, these findings suggest that subjects are more likely to change their voting intentions and choose the Yes side when they are confronted with more arguments supporting independence (TG2), compared to when they are able to select the arguments to read (TG1). In the latter case, the possibility to select helps subjects reinforce predispositions, as confirmed by the fact that both Yes and No votes increase in TG1, although the increase in No votes is small and not statistically significant.

**Figure 6.3. Voting intentions at the Scottish independence referendum, percentage of subjects**



**Table 6.4. The effect of provision of information on voting intentions and decision on how to vote**

Group	Voting intentions			
	Yes	No	Undecided / Would not vote	Total (N)
<b>CG</b>	18,6%	54,2%	27,1%	100% (59)
<b>TG1</b>	29,3%	56,9%	13,7%	100% (58)
<i>Treatment effect</i>	<b>+10.7*</b>	+2.7	<b>-13.4**</b>	
<b>TG2</b>	33,9%	45,8%	20,4%	100% (59)
<i>Treatment effect</i>	<b>+15.3**</b>	-8.4	-6.7	

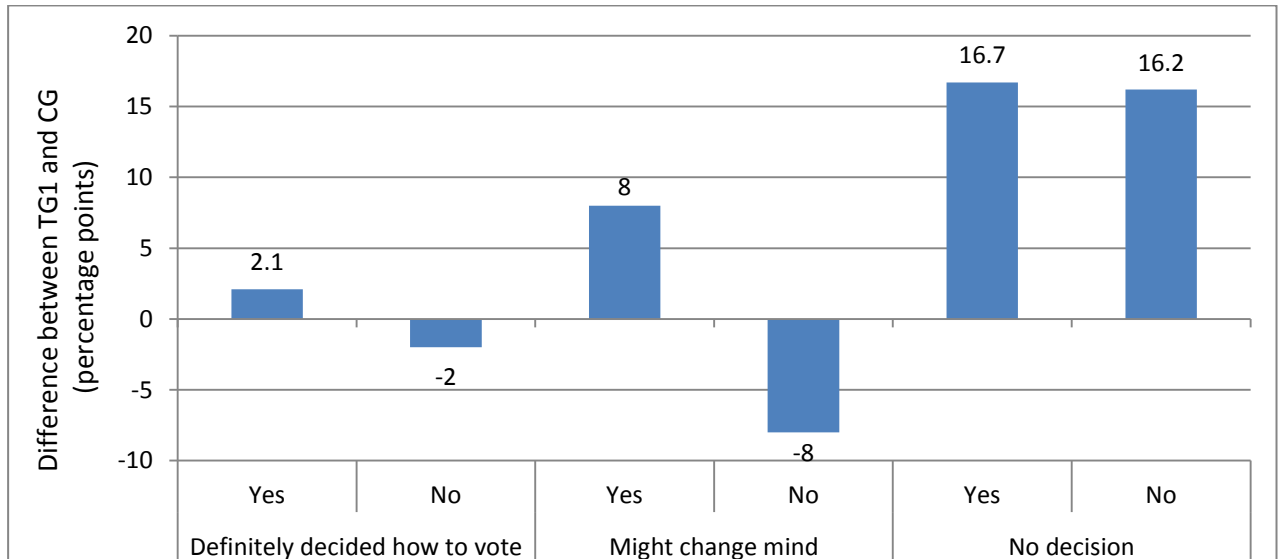
Treatment effect = difference between TG and CG

P-values for one-tailed t-test: \* =  $p < 0.1$ , \*\* =  $p < 0.05$ , \*\*\* =  $p < 0.01$

The analysis at the group level, however, does not take into account the mediating factor of individuals' level of decision. If the research hypotheses prove true, information should have a stronger impact on those who are more undecided, since they lack the incentive to both evaluate arguments in an unbalanced way and select evidence which reinforces pre-existing voting intentions. A breakdown of the treatment groups by levels of decision confirms this hypothesis: the more uncertain the subjects are, the stronger the effect of information on their voting intentions. On the other hand, if voters have already made up their minds, provision of new information almost does not affect their initial predispositions. This is particularly clear in the case of treatment group 1 compared

to control group, as illustrated in the graph below. Data in appendix (table 3) confirm that the effect of information among those who are still uncertain is statistically significant in both groups but only in relation to the likelihood to vote Yes.

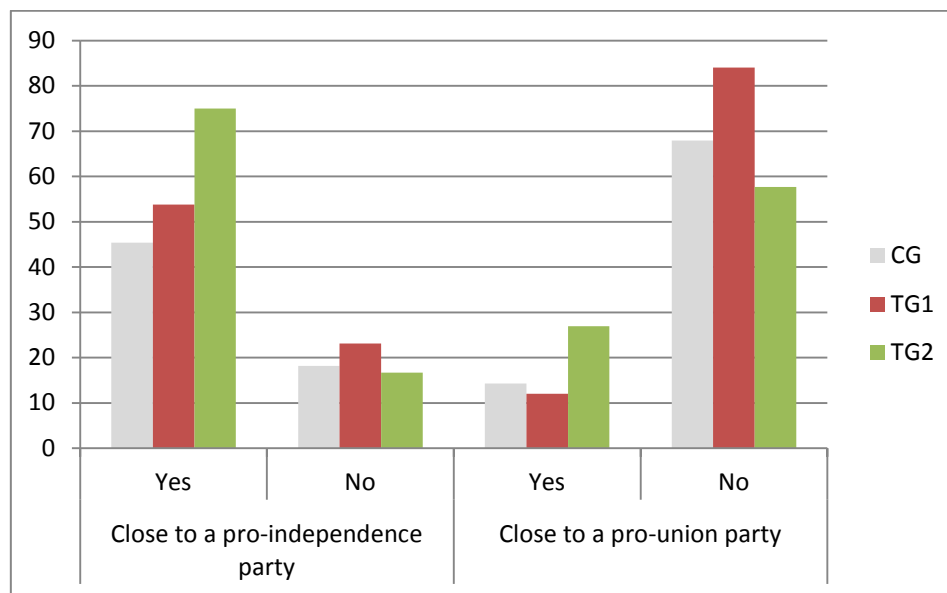
**Figure 6.4. The effect of provision of information on voting intentions by decision levels (TG1 compared to CG)**



In line with Zaller's (1992) model, a further analysis can be conducted to test whether political predispositions also impact on reception of evidence. Data allow this type of analysis by dividing subjects in three groups, according to their party identities (voters who are close to a pro-independence party, those who are close to a pro-union party, and those who are not close to any party). Results show that the effect information on voting intentions differs depending on subjects' political affinity. Even if the texts provided in the treatment did not have any political label, it is easy to assume that subjects' affiliation to a party affects their interpretation of the texts, especially when they are able to select the arguments to read. As shown in the graph below, in treatment group 1 opposite effects occur depending on whether subjects are close to either a pro-independence or a pro-union party. In the first case, information increases the likelihood to vote Yes, while in the latter case, information increases the likelihood to vote No.



**Figure 6.5. Voting intentions by party identity**



### 6.5. Being pro-independence requires more involvement than being pro-union

#### - Determinants of vote

The final group of results concerns additional factors that mediate the reception of information at the individual level. A preliminary analysis on the determinants of vote helps identify the elements which might interact with the treatments. The dependent variable in this case is a dummy variable for only Yes/No voting intentions, excluding those who are undecided or not-willing-to-vote.

With regards to demographic factors, the results of the regression analysis in appendix show that older subjects are more likely to vote Yes than younger subjects, and the same applies to males compared to females. In terms of identity, those who identify as more Scottish than British are also more likely to vote Yes, and vice versa.

Variables related to political dimensions are also strongly correlated with intentions to vote. In particular, trust in Westminster Parliament is the strongest predictor of the vote, followed by partisanship, left-right positioning, political interest and political activism. More specifically, the less trust subjects have in Westminster Parliament, the more likely they are to vote Yes, and vice versa. In addition to these variables, those who gather more information on Scottish independence in the media are also more likely to support independence, and the same correlation applies to those who think that the economic situation of their household will get worse in the next 12 months, and those who are more likely to take risks. It is important to stress, however, that these findings refer to a non-representative pool of subjects who self-selected themselves as participants to the experiment, thus they cannot be interpreted as representative of a broader population.

#### - Political interest, activism and information gathering

In line with the third group of hypotheses, results confirm that information increases the likelihood to vote Yes especially among those who are more politically involved. Individuals with a higher interest in politics, a higher level of political activism and a higher level of information gathering in the media are more likely to vote Yes after receiving the treatment. These effects are statistically significant in both treatment groups, and are stronger when subjects are presented with a balanced set of arguments (see data in appendix).

On the other hand, information increases also the likelihood to vote No among the opposite categories (i.e. subjects with a low interest in politics, a low level of activism and a low level of information gathering), but this effect is smaller, generally not statistically significant, and occurs only when subjects can select information (TG1).

*- Identity factors*

Not only those who are more politically involved are supposed to be more receptive to pro arguments. Since identity elements play also a crucial part in the choice of independence, it can be assumed that information interacts differently also among those who are more emotionally involved in the referendum campaign. This assumption can be tested by looking at individual-level identity factors, such as the number of years spent in Scotland, the country of birth, and the self-reported identity. In all these cases, findings show that information increases the likelihood to vote Yes among those who have been living in Scotland for a longer period, those who were born in the UK (and especially in Scotland) and those who identify themselves as either Scottish or British (see tables in appendix). This effect is statistically significant in both groups and is generally stronger when subjects read a balanced set of arguments (TG2), in line with hypotheses.

As in the case of political involvement, provision of information also increases the likelihood to vote No among the opposite categories (i.e. those who have been living in Scotland for a shorter period, those who were not born in the UK and those who does not identity as either Scottish or British). These effects, however, are smaller and they are statistically significant only in the case of those who care less about the issue of independence (see table 7 in appendix).

*- Perception of the economy and attitude towards risk*

Another element which interacts with the treatment is subjects' perception of the future financial situation of their household. In replying to the question "How do you think the financial situation of your household will change over the next 12 months?", around 14 percent are pessimistic, thinking that the situation will get worse, while almost 50 percent believe that their household's financial situation will get better. As the table below makes clear, provision of information interacts with subjects' perceptions of their future financial situation, by increasing the likelihood to vote Yes among those with pessimistic perspectives. This finding can be interpreted in relation to the element of uncertainty intrinsic in the 'changing' option, meaning that those who foresee a pessimistic future for their financial situation would have less to lose in the case that independence proves troublesome for the country's economy, thus, they are more likely to accept pro arguments and decide to vote Yes.

On the other hand, those who are able to select information and think the financial situation of their household will improve move in the opposite direction. After reading the arguments they become substantially more convinced to vote No. This finding is also statistically significant and can be explained again with the idea that these voters would have more to lose from a situation of uncertainty, thus preferring the status quo, especially when the current situation guarantees future financial benefits.

**Table 6.5. Voting intentions by perception of future financial situation of household**

Group	Financial situation of household will get worse/stay the same				Financial situation of household will get better			
	Yes	No	Undecided / Would not vote	Total (N)	Yes	No	Undecided / Would not vote	Total (N)
<b>CG</b>	<b>13.0%</b>	<b>65.2%</b>	<b>21.7%</b>	<b>100% (23)</b>	<b>21.2%</b>	<b>51.5%</b>	<b>27.3%</b>	<b>100% (33)</b>
<b>TG1</b>	<b>40.6%</b>	<b>43.7%</b>	<b>15.6</b>	<b>100% (32)</b>	<b>13.0%</b>	<b>78.3%</b>	<b>8.7%</b>	<b>100% (23)</b>
<i>Treatment effect</i>	<b>+27.6**</b>	<b>-21.5*</b>	<b>-6.1</b>		<b>-8.2</b>	<b>+26.7**</b>	<b>-18.6**</b>	
<b>TG2</b>	<b>40.7%</b>	<b>44.4%</b>	<b>14.8%</b>	<b>100% (27)</b>	<b>25.0%</b>	<b>50.0%</b>	<b>25.0%</b>	<b>100% (28)</b>
<i>Treatment effect</i>	<b>+27.7**</b>	<b>-20.8*</b>	<b>-6.9</b>		<b>+3.8</b>	<b>-1.5</b>	<b>-2.3</b>	

Treatment effect = difference between TG and CG

P-values for one-tailed t-test: \* = p<0.1, \*\* = p<0.05, \*\*\* = p<0.01

Following this line of reasoning, individuals' attitude towards risk is also supposed to interact with provision of information. In this case, as the preliminary analysis of the determinants of voting intentions has shown, the relationship between voting Yes and taking risks is linear, meaning that as subjects' likelihood to take risks increases, the likely to support independence increases as well, and vice versa.

A breakdown of the pool along the median value of the risk scale<sup>17</sup> confirms this type of interaction, by revealing that information increases the likelihood to vote Yes among those who dislike to take risks. While risk takers do not need additional evidence to support the cause of independence, those who are more risk-averse (and also more undecided), on the contrary, benefit more from reading arguments which reduce the uncertainties of changing the status quo and make the Yes option appear less risky. This effect is statistically significant in both treatment groups as shown in the table below.

**Table 6.6. Voting intentions by likelihood to take risks**

Group	Risk takers (values equal/above median)				Risk-averse subjects (values below median)			
	Yes	No	Undecided / Would not vote	Total (N)	Yes	No	Undecided / Would not vote	Total (N)
<b>CG</b>	<b>28.1%</b>	<b>53.1%</b>	<b>18.7%</b>	<b>100% (32)</b>	<b>7.4%</b>	<b>55.6%</b>	<b>37.0%</b>	<b>100% (27)</b>
<b>TG1</b>	<b>28.1%</b>	<b>59.4%</b>	<b>12.5%</b>	<b>100% (32)</b>	<b>30.8%</b>	<b>53.8%</b>	<b>15.4%</b>	<b>100% (26)</b>
<i>Treatment effect</i>	<b>0</b>	<b>+6.3</b>	<b>-6.2</b>		<b>+23.4**</b>	<b>-1.8</b>	<b>-21.6**</b>	
<b>TG2</b>	<b>37.2%</b>	<b>46.5%</b>	<b>16.3%</b>	<b>100% (43)</b>	<b>25.0%</b>	<b>43.7%</b>	<b>31.2%</b>	<b>100% (16)</b>
<i>Treatment effect</i>	<b>+9.1</b>	<b>-6.6</b>	<b>-2.4</b>		<b>+17.6*</b>	<b>-11.8</b>	<b>-5.8</b>	

Treatment effect = difference between TG and CG

P-values for one-tailed t-test: \* = p<0.1, \*\* = p<0.05, \*\*\* = p<0.01

<sup>17</sup> The scale ranges from 0 (Really dislike taking risks) to 10 (Really like taking risks), in reply to the following question: "In general do you dislike taking risks, or do you like taking risks? Please use the scale below where 0 means really dislike taking risks and 10 means really like taking risks to indicate how you generally feel about taking risks".

## **7. Conclusions**

In a highly polarised referendum campaign in which only a narrow gap separates supporters of the Yes and No side, succeeding in convincing even a handful of voters can prove essential for winning. If, in addition, a relevant share of the electorate is uncertain about how to vote, campaigners need to use all their available weapons to try to persuade as many undecided citizens as possible to join their side. Within this context, the ‘information weapon’ becomes extremely relevant, especially since politicians and political parties play a weaker and more ambiguous role in referendum campaigns compared to general election campaigns. Yet, aside from general common sense, demonstrating whether provision of information actually affects voting intentions proves far from an easy task. By adopting an experimental design, the present study has attempted to demonstrate the occurrence of such effects in the context of the Scottish independence referendum. Results at the group level confirm that provision of information does affect voting intentions mainly by a) reducing indecision, especially when individuals are able to select which arguments to read, and b) increasing the likelihood to vote Yes, especially when a balanced set of arguments is presented.

At the theoretical level, the experiment provides further confirmation of a prior attitude effect, by showing a strong correlation between subjects’ evaluation of evidence and pre-existing voting intentions, to the extent that the same piece of text is evaluated in a significantly different way depending on the person who reads it. In addition, the occurrence of the mechanism of selective exposure is also confirmed, suggesting that, when free to choose, people tend to select the arguments that support instead of challenging their pre-existing beliefs. Although this tendency is moderate at the aggregated level, it becomes stronger in the case of those who have already decided how to cast their vote.

The key to interpret the effects of information on voting intentions, however, lies in the interaction between these general mechanisms and individuals’ predispositions, as suggested by Zaller’s (1992) model and more recent studies (see Lavine et al., 2012). Contrary to a general tendency in the literature which assumes that these mechanisms are unidirectional, the results of the experiment reveal that effects of information are not linear, since voters react differently to the provision of the same arguments. Firstly, the possibility to read convincing arguments becomes more relevant as the level on indecision in the electorate increases. This finding indicates that the effect of information on voting intentions passes mainly through the channel of reducing indecision, thus suggesting that as the number of undecided voters decreases, the margins for referendum campaigns to change voting intentions narrow down.

Secondly, the reduction of indecision seems to explain also the specific increase in the likelihood to vote Yes, since the ‘change’ option is the one which carries more uncertainties compared to maintaining the status quo. For this reason, those who are leaning towards voting Yes but are not completely decided are also the ones who benefit more from reading convincing arguments which reduce the uncertainties related to independence. The same pattern applies to the attitudes towards risk: provision of information has a stronger effect among those who are more risk-averse, since it helps them consider the Yes option as less risky and more acceptable.

Finally, with regards to the Yes side, information contributes to increasing the support for independence when it meets a ‘fertile soil’, such as in the case of those who are more politically active, more informed about the referendum and more emotionally involved in the issue of independence due to a series of identity factors. Information also contributes to slightly increase the likelihood to vote No, but this effect occurs in general only when subjects are able to select the arguments to read and only in very few sub-groups, such as in the case of those who are close to a pro-union party, those who are less informed about the referendum, and those who care less about the issue of independence.

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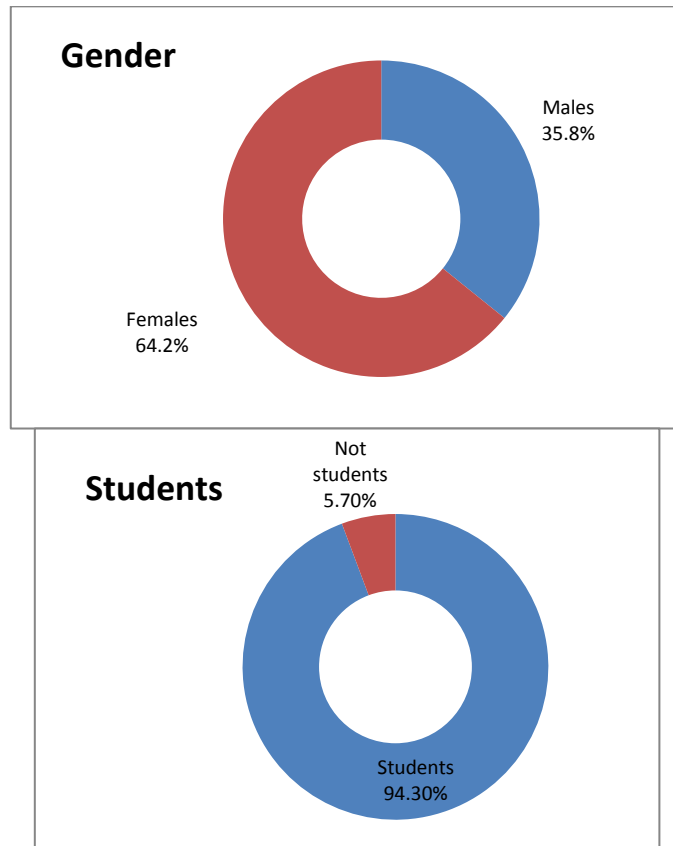
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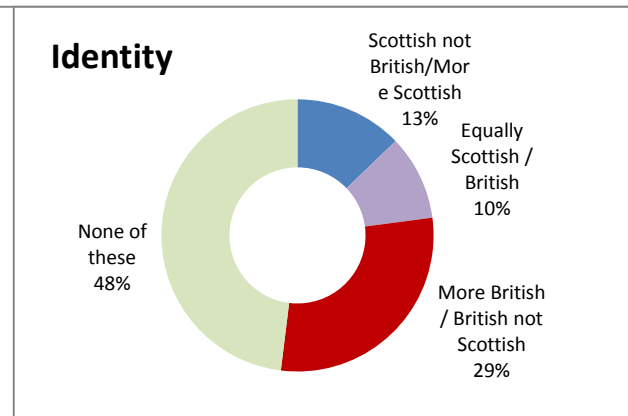
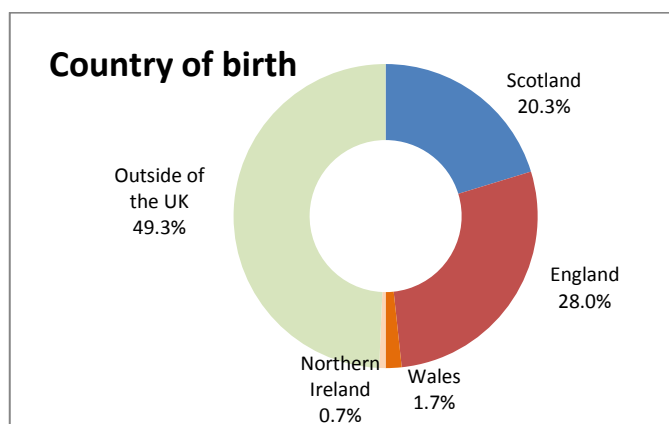
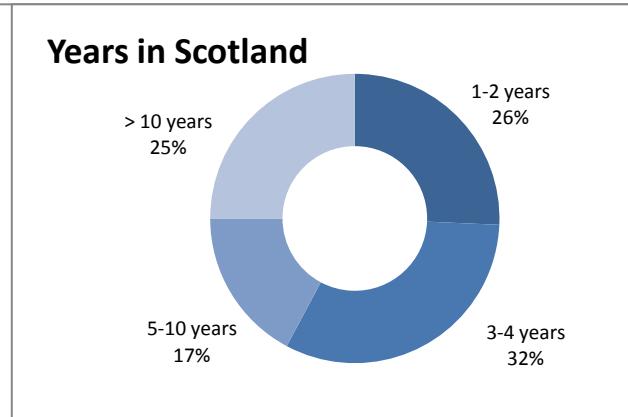
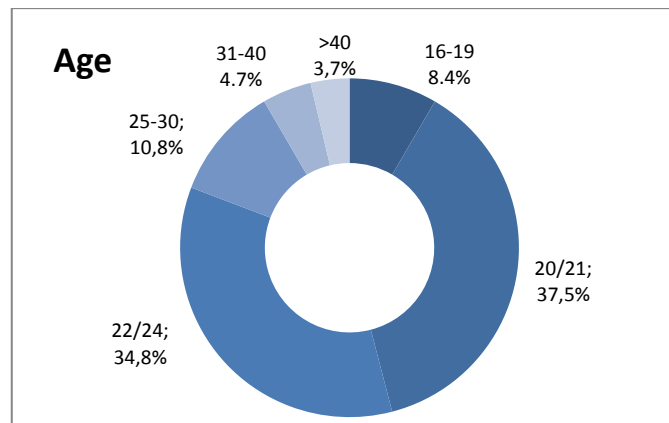
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## Appendix

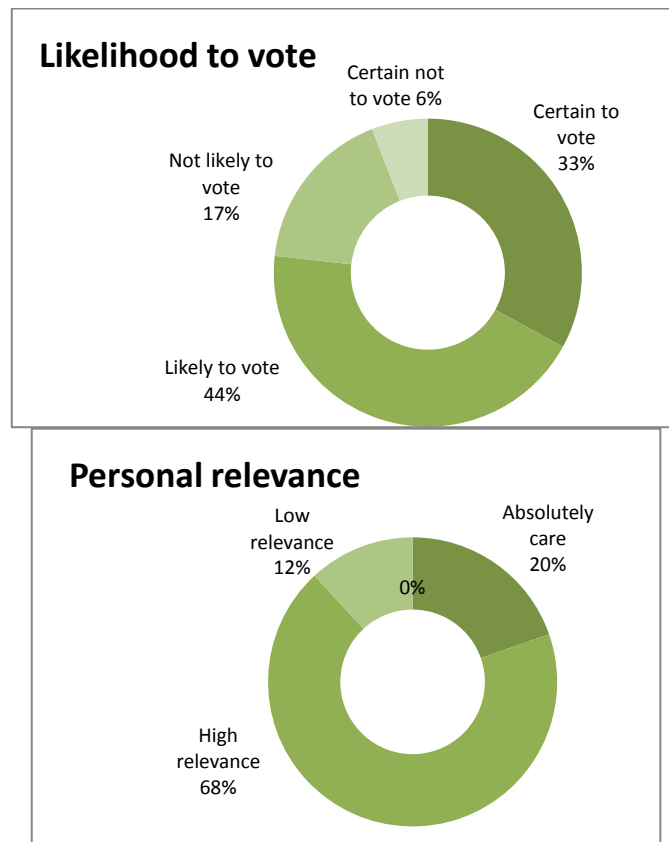
**Figure 1. Composition of the subject pool**  
(percentages out of the total number of subjects, N=296)







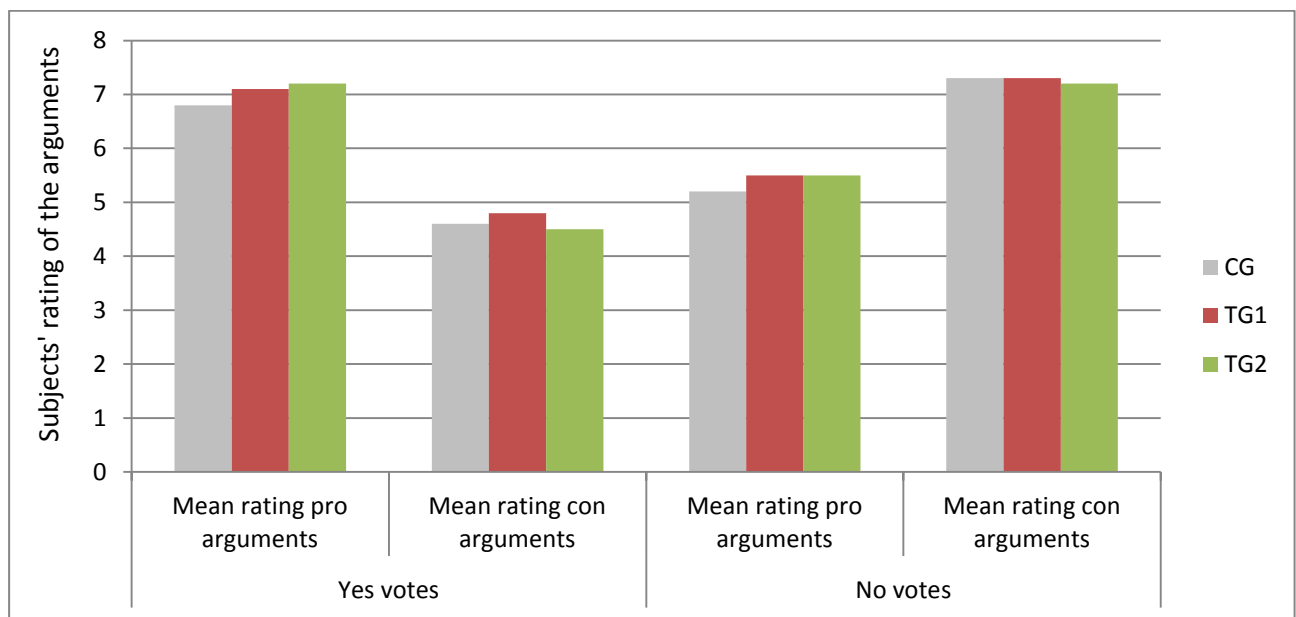
**Figure 2. Likelihood to vote and personal relevance of the issue of Scottish independence (percentages out of the total number of subjects, N=296)**



*Likelihood to vote* (original question): “As you may know, a referendum on independence will be held in Scotland in September this year. On a scale of 0 (certain NOT to vote) to 10 (absolutely certain to vote), how likely are you to vote in this referendum?”

*Personal relevance* (original question): “How much do you personally care about the issue of Scottish independence?”. Answers ranging from 0 (Do not care at all) to 10 (Absolutely care).

**Figure 3. Evaluation of the arguments by voting intentions and treatment groups**



*Rating of the arguments:* from 0 (extremely weak) to 10 (extremely strong)

NB: Subjects evaluated the arguments by replying to the following question after reading each text: “How weak or strong do you believe the argument contained in this text is? Please note: we want to know how weak or strong you believe the argument is, not whether you agree or disagree with the argument.”

**Table 1. Regression of the rating of the arguments on voting intentions**

	(1)	(2)	(3)
<b>Rating of the arguments</b>	<b>.112 (.010)***</b>	<b>.102 (.011)***</b>	<b>.102 (.011)***</b>
Age		.034 (.027)	.033 (.027)
Gender		-.036 (.062)	-.028 (.063)
Identity		.033 (.027)	.031 (.027)
Information gathering on referendum			.006 (.011)
Constant	.395 (.030)***	.330 (.092)***	.290 (.113)**
R-squared	.464	.477	.478
N	140	140	140

P-values: \* =  $p < 0.1$ , \*\* =  $p < 0.05$ , \*\*\* =  $p < 0.01$

*Voting intentions:* dummy variable, 0 = vote NO / 1 = vote Yes (undecided subjects excluded).

*Rating of the arguments:* individual-level difference between mean rating of pro arguments and mean rating of con arguments. Interval variable ranging from -10 (maximum rating of con arguments and minimum rating of pro arguments) to +10 (maximum rating of pro arguments and minimum rating of con arguments).

**Table 2. Rating of the arguments by decision on how to vote and voting intentions  
(all groups, CG + TG1 + TG2)**

Difference in the ratings	Definitely decided how to vote				Might change mind				No decision				Undecided vote (N=24)	
	Yes vote (N=14)		No vote (N=37)		Yes vote (N=14)		No vote (N=33)		Yes vote (N=20)		No vote (N=22)			
	Rating pro arguments	Rating con arguments	Rating pro	Rating con	Rating pro	Rating con	Rating pro	Rating con	Rating pro	Rating con	Rating pro	Rating con	Rating pro	Rating con
	7.77	3.30	5.23	7.60	7.38	5.05	5.74	6.95	6.35	5.28	5.15	7.20	5.97	6.12
	4.47  ***		2.37  ***		2.33  ***		1.21  ***		1.07  **		2.05  ***		0.15	

P-values for two-tailed t-test: \* = p&lt;0.1, \*\* = p&lt;0.05, \*\*\* = p&lt;0.01

**Table 3. The effect of provision of information on voting intentions by decision levels**

Group	Definitely decided how to vote			Might change mind			No decision		
	Yes	No	Total* (N)	Yes	No	Total* (N)	Yes	No	Total* (N)
<b>CG</b>	<b>21.0%</b>	<b>78.9%</b>	<b>100% (19)</b>	<b>21.4%</b>	<b>78.6%</b>	<b>100% (14)</b>	<b>15.4%</b>	<b>23.1%</b>	<b>100% (26)</b>
<b>TG1</b>	<b>23.1%</b>	<b>76.9%</b>	<b>100% (13)</b>	<b>29.4%</b>	<b>70.6%</b>	<b>100% (17)</b>	<b>32.1%</b>	<b>39.3%</b>	<b>100% (28)</b>
<i>Treatment effect</i>	<b>+2.1</b>	<b>-2.0</b>		<b>+8.0</b>	<b>-8.0</b>		<b>+16.7*</b>	<b>+16.2</b>	
<b>TG2</b>	<b>35.0%</b>	<b>60.0%</b>	<b>100% (20)</b>	<b>35.3%</b>	<b>58.8%</b>	<b>100% (17)</b>	<b>+31.8</b>	<b>22.7</b>	<b>100% (22)</b>
<i>Treatment effect</i>	<b>+14.0</b>	<b>-18.9</b>		<b>+13.9</b>	<b>-19.8</b>		<b>+16.4*</b>	<b>-0.4</b>	

\*Total=sum of Yes and No voting intentions plus unreported Undecided/Would-not-vote intentions

Treatment effect = difference between TG and CG

P-values for one-tailed t-test: \* = p&lt;0.1, \*\* = p&lt;0.05, \*\*\* = p&lt;0.01

**Table 4. The effect of provision of information on voting intentions by party identities**

Group	Close to a pro-independence party			Not close to any party			Close to a pro-union party		
	Yes	No	Total* (N)	Yes	No	Total* (N)	Yes	No	Total* (N)
<b>CG</b>	<b>45.4%</b>	<b>18.2%</b>	<b>100% (11)</b>	<b>10.0%</b>	<b>55.0%</b>	<b>100% (20)</b>	<b>14.3%</b>	<b>67.9%</b>	<b>100% (28)</b>
<b>TG1</b>	<b>53.8%</b>	<b>23.1%</b>	<b>100% (13)</b>	<b>27.8%</b>	<b>50.0%</b>	<b>100% (18)</b>	<b>12.0%</b>	<b>84.0%</b>	<b>100% (25)</b>
<i>Treatment effect</i>	<b>+8.4</b>	<b>+4.9</b>		<b>+17.8*</b>	<b>-5.0</b>		<b>-2.3</b>	<b>+16.1*</b>	
<b>TG2</b>	<b>75.0%</b>	<b>16.7%</b>	<b>100% (12)</b>	<b>19.0%</b>	<b>47.6%</b>	<b>100% (21)</b>	<b>26.9%</b>	<b>57.7%</b>	<b>100% (26)</b>
<i>Treatment effect</i>	<b>+29.6*</b>	<b>-1.5</b>		<b>+9.0</b>	<b>-7.4</b>		<b>+12.6</b>	<b>-10.2</b>	

\*Total=sum of Yes and No voting intentions plus unreported Undecided/Would-not-vote intentions

Treatment effect = difference between TG and CG

P-values for one-tailed t-test: \* = p<0.1, \*\*= p<0.05, \*\*\*= p<0.01

**Table 5. Voting intentions by interest in politics, political activism and information gathering in the media about the issue of Scottish independence**

Group	Voting intentions							
	Yes	No	Undecided / Would not vote	Total (N)	Yes	No	Undecided / Would not vote	Total (N)
	High interest in politics				Low/some interest in politics			
<b>CG</b>	<b>20.0%</b>	<b>56.0%</b>	24.0%	100% (25)	<b>17.6%</b>	<b>52.9%</b>	29.4%	100% (34)
<b>TG1</b>	<b>37.9%</b>	<b>48.3%</b>	13.8%	100% (29)	<b>20.7%</b>	<b>65.5%</b>	13.8%	100% (29)
<i>Treatment effect</i>	<b>+17.9*</b>	<b>-7.7</b>	-10.2		<b>+3.1</b>	<b>+12.6</b>	-15.6*	
<b>TG2</b>	<b>41.7%</b>	<b>41.7%</b>	16.7%	100% (24)	<b>28.6%</b>	<b>48.6%</b>	22.9%	100% (35)
<i>Treatment effect</i>	<b>+21.7*</b>	<b>-14.3</b>	-7.3		<b>+11.0</b>	<b>-4.3</b>	-6.5	
	High level of political activism (values equal/above median)				Low level of political activism (values below median)			
<b>CG</b>	<b>19.4%</b>	<b>50.0%</b>	30.6%	100% (36)	<b>17.4%</b>	<b>60.9%</b>	21.7%	100% (23)
<b>TG1</b>	<b>35.1%</b>	<b>48.6%</b>	16.2%	100% (37)	<b>19.0%</b>	<b>71.4%</b>	9.5%	100% (21)
<i>Treatment effect</i>	<b>+15.6*</b>	<b>-1.4</b>	-14.4*		<b>+1.6</b>	<b>+10.5</b>	-12.2	
<b>TG2</b>	<b>43.7%</b>	<b>37.5%</b>	18.7%	100% (32)	<b>22.2%</b>	<b>55.6%</b>	22.2%	100% (27)
<i>Treatment effect</i>	<b>+24.3**</b>	<b>-12.5</b>	-11.8		<b>+4.8</b>	<b>-5.3</b>	+0.5	
	High level of information gathering (values equal/above median)				Low level of information gathering (values below median)			
<b>CG</b>	<b>8.0%</b>	<b>76.0%</b>	16.0%	100% (25)	<b>26.5%</b>	<b>38.2%</b>	35.3%	100% (34)
<b>TG1</b>	<b>33.3%</b>	<b>53.8%</b>	12.8%	100% (39)	<b>21.0%</b>	<b>63.2%</b>	15.8%	100% (19)
<i>Treatment effect</i>	<b>+25.3***</b>	<b>-22.2**</b>	-3.2		<b>-5.5</b>	<b>+24.9**</b>	-19.5*	
<b>TG2</b>	<b>42.1%</b>	<b>44.7%</b>	13.2%	100% (38)	<b>19.0%</b>	<b>47.6%</b>	33.3%	100% (21)
<i>Treatment effect</i>	<b>+34.1***</b>	<b>-31.3***</b>	-2.8		<b>-7.5</b>	<b>+9.4</b>	-2.0	

Treatment effect = difference between TG and CG

P-values for one-tailed t-test: \* =  $p < 0.1$ , \*\* =  $p < 0.05$ , \*\*\* =  $p < 0.01$ *Political activism*: index ranging from 0 (minimum level of activism) to 6 (maximum level).*Information gathering*: index ranging from 0 (no information gathering on Scottish independence on television or newspapers) to 10 (maximum level of information gathering).

**Table 6. Voting intentions by years in Scotland, identity and country of birth**

Group	Voting intentions							
	Yes	No	Undecided / Would not vote	Total (N)	Yes	No	Undecided / Would not vote	Total (N)
	Living in Scotland for more than 3 years (since at least 2011)				Living in Scotland for less than 3 years			
<b>CG</b>	<b>13.3%</b>	<b>50.0%</b>	36.7%	100% (30)	<b>24.1%</b>	<b>58.6%</b>	17.2%	100% (29)
<b>TG1</b>	<b>36.1%</b>	<b>52.8%</b>	11.1%	100% (36)	<b>18.2%</b>	<b>63.6%</b>	18.2%	100% (22)
<i>Treatment effect</i>	<b>+22.8**</b>	<b>+2.8</b>	-25.5***		<b>-5.9</b>	<b>+5.0</b>	+1.0	
<b>TG2</b>	<b>41.9%</b>	<b>45.2%</b>	12.9%	100% (31)	<b>25.0%</b>	<b>46.4%</b>	28.6%	100% (28)
<i>Treatment effect</i>	<b>+28.6***</b>	<b>-4.8</b>	-23.7**		<b>+0.9</b>	<b>-12.2</b>	+11.3	
	Identity UK (Scottish / British / Equally)				Identity NOT UK			
<b>CG</b>	<b>14.3%</b>	<b>64.3%</b>	21.4%	100% (28)	<b>22.6%</b>	<b>45.2%</b>	32.3%	100% (31)
<b>TG1</b>	<b>28.9%</b>	<b>63.2%</b>	7.9%	100% (38)	<b>30.0%</b>	<b>45.0%</b>	25.0%	100% (20)
<i>Treatment effect</i>	<b>+14.6*</b>	<b>-1.1</b>	-13.5*		<b>+7.4</b>	<b>-0.2</b>	-7.3	
<b>TG2</b>	<b>39.4%</b>	<b>45.4%</b>	15.1%	100% (33)	<b>26.9%</b>	<b>46.1%</b>	26.9%	100% (26)
<i>Treatment effect</i>	<b>+25.1**</b>	<b>-18.8*</b>	-6.3		<b>+4.3</b>	<b>+0.9</b>	-5.4	
	Born in the UK				Born outside the UK			
<b>CG</b>	<b>3.7%</b>	<b>74.1%</b>	22.2%	100% (27)	<b>31.2%</b>	<b>37.5%</b>	31.2%	100% (32)
<b>TG1</b>	<b>28.1%</b>	<b>59.4%</b>	12.5%	100% (32)	<b>30.8%</b>	<b>53.8%</b>	15.4%	100% (26)
<i>Treatment effect</i>	<b>+24.4***</b>	<b>-14.7</b>	-9.7		<b>-0.4</b>	<b>+16.3</b>	-15.9*	
<b>TG2</b>	<b>40.6%</b>	<b>46.9%</b>	12.5%	100% (32)	<b>25.9%</b>	<b>44.4%</b>	29.6%	100% (27)
<i>Treatment effect</i>	<b>+36.9***</b>	<b>-27.2**</b>	-9.7		<b>-5.3</b>	<b>+6.9</b>	-1.6	

Treatment effect = difference between TG and CG

P-values for one-tailed t-test: \* =  $p < 0.1$ , \*\* =  $p < 0.05$ , \*\*\* =  $p < 0.01$

**Table 7. Voting intentions by personal relevance of the issue of Scottish independence**

<i>Group</i>	<b>Care more about Scottish independence</b> (values equal/above median)				<b>Care less about Scottish independence</b> (values below median)			
	<b>Yes</b>	<b>No</b>	Undecided / Would not vote	<i>Total (N)</i>	<b>Yes</b>	<b>No</b>	Undecided / Would not vote	<i>Total (N)</i>
<b>CG</b>	<b>17.1%</b>	<b>68.3%</b>	14.6%	100% (41)	<b>22.2%</b>	<b>22.2%</b>	55.6%	100% (18)
<b>TG1</b>	<b>26.3%</b>	<b>60.5%</b>	13.2%	100% (38)	<b>35.0%</b>	<b>50.0%</b>	15.0%	100% (20)
<i>Treatment effect</i>	<b>+9.2</b>	<b>-7.8</b>	-1.4		<b>+12.7</b>	<b>+27.7**</b>	-40.6***	
<b>TG2</b>	<b>39.1%</b>	<b>43.5%</b>	17.4%	100% (46)	<b>15.4%</b>	<b>53.8%</b>	30.8%	100% (13)
<i>Treatment effect</i>	<b>+22.0**</b>	<b>-24.8**</b>	+2.8		<b>-6.8</b>	<b>+31.6**</b>	-24.8*	

Treatment effect = difference between TG and CG

P-values for one-tailed t-test: \* =  $p < 0.1$ , \*\* =  $p < 0.05$ , \*\*\* =  $p < 0.01$



**Table 8. Factors correlated to voting intentions**

NB: Data refer to a non-representative pool of 296 subjects who self-selected themselves as participants to the experiment. For these reasons, the p-values for statistical significance cannot be interpreted as if subjects were representative of a broader population.

**Regression models on post-treatment vote intentions**

(dummy variable, only decided subjects, all treatment groups + cg-post, 0=no 1=yes)

	<b>MODEL 1</b> Age Gender Identity	<b>MODEL 2</b> Age Identity Risk LRscale	<b>MODEL 3</b> Age Gender Economy Trust	<b>MODEL 4</b> Gender Identity LRscale Trust	<b>MODEL 5</b> Age Media Partisanship Trust
Age	.107*** (.023)	.098*** (.025)	.076*** (.024)		.068** (.025)
Gender	-.141** (.057)		-.185*** (.055)	-.191*** (.059)	
Identity	.153*** (.043)	.121*** (.045)		.104** (.045)	
Risk		.030** (.015)			
Future household economy			-.106*** (.039)		
Information gathering on referendum					.025** (.010)
Left-right scale		-.065*** (.014)		-.046*** (.015)	
Partisanship					.152*** (.026)
Trust in Westminster			-.081*** (.011)	-.081*** (.013)	-.072*** (.011)
Constant	.193*** (.072)	.316*** (.101)	.621*** (.103)	1.024*** (.082)	.375*** (.111)
R-squared	.161	.229	.313	.320	.379
N	241	211	215	195	216

Standard errors in parentheses. P-values: \* = p<0.1, \*\* = p<0.05, \*\*\* = p<0.01

**Dependent variable**

	Type	Values	N	Mean	St dev
<b>Post-treatment vote</b>	Dummy	0 No 1 Yes	241	.33 (33% of Yes votes)	.47

N.B. Vote intentions are collected for each treatment group and from post-reading vote intentions for the control group (CG-POST).

**Independent variables**

<i>Variables</i>	<i>Type</i>	<i>Values</i>	<i>N</i>	<i>Mean</i>	<i>St dev</i>
<b>Gender</b>	Dummy	0 male 1 female	296	.64 (64% female)	.48
<b>Age</b>	Ordinal 5 items	16/19=1 (8%) 20/21=2 (37%) 22/24=3 (35%) 25/30=4 (11%) >31/40=5 (9%)	296	23.7 (average age of the sample)	6.84
<b>Identity</b>	Ordinal 3 items	1 = Scottish not British / More Scottish than British 0 = Equally Scottish and British / none of these identities -1 = More British than Scottish / British not Scottish	296	-.162	.627
<b>Partisanship</b> (Combination of 2 questions: “party close to” multiplied for degree of support)	Ordinal 7 items	2 = very strong supporter of party pro independence 1.5 = fairly strong supporter of party pro independence 1 = not very strong supporter of party pro independence 0 = not close to any party -1 = not very strong supporter of party against independence -1.5 = fairly strong supporter of party against independence -2 = very strong supporter of party against independence	291	-.28 (the mean subject is not close to any party, and fairly leaning against independence)	
<b>Left-right scale</b>	Ordinal 11 items	From 0 (left) To 10 (right) NB: No placement and Don't knows excluded	247	3.78	2.04
<b>Trust in Westminster Parliament</b>	Ordinal 11 items	From 0 (no trust) To 10 (a great deal of trust)	273	4.14	2.38
<b>Risk</b>	11 items	from -5 = really dislike taking risks to +5 = really like taking risks (0 = mid-point value)	295	0.73	2.04
<b>Future household economy</b> (Economic situations of subjects' household in the next 12 months)	3 items	1 = a little better/a lot better 0 = same -1 = a lot worse/a little worse	274	0.34 (the average subject believes the future economic situation of his/her household will slightly improve over the next 12months)	.71
<b>Information gathering on referendum</b> Index combining information gathering on television and newspapers (print or online versions) on the issue of Scottish independence over the last 6 months	11 items	<b>From 0</b> (no information gathering on Scottish independence on television or newspapers) <b>to 10</b> (maximum level of information gathering)	296	5.44	2.67

## **Original questions**

### **Trust:**

Q: Now think about British and Scottish political institutions. Using the 0 to 10 scale where 0 means no trust and 10 means a great deal of trust, how much do you trust... ..the British Parliament at Westminster?

A: 0 (no trust) ... 10 (a great deal of trust)

### **Identity:**

Q: Which, if any, of the following best describes how you see yourself?

A: Scottish not British (1) / More Scottish than British (2) / Equally Scottish and British (3) / More British than Scottish (4) / British not Scottish (5) / None of these (6)

### **Political interest**

Q: How much interest do you generally have in what is going on in politics?

A: A great deal (4) / Quite a lot (3) / Some (2) / Not very much (1) / None at all (0)

### **Index of political activism** (sum of the answers to the following YES/NO questions)

Q: Now, a few questions about how active you are in politics and community affairs. In the past 12 months, have you...

...worked actively with a group of people to address a public issue or solve a problem? (1)

...showed your concern about a public issue or problem? (2)

...given money to a political party? (3)

...worked for a party or a candidate in an election campaign? (4)

...worked for either the pro-independence or pro-union campaign? (5)

...joined a boycott, that is, refuse to buy a particular product or to shop at a particular store? (6)

...deliberately bought certain products for political, ethical, or environmental reasons? (7)

A: Yes 1 / No 0

### **Partisanship** (combination of the answers to the following two questions)

Q: Do you generally think of yourself as a little closer to one of the parties listed below?

A: Conservatives, Scottish Conservatives / Labour, Scottish Labour / Liberal Democrats, Scottish Liberal Democrats / Scottish National Party (SNP) / Scottish Green Party / United Kingdom Independence Party (UKIP) / British National Party (BNP) / None / Other (please enter the name of a party)

Q: (if "None" is Not Selected) Would you call yourself a very strong, fairly strong, or not very strong supporter of the [selected party]?

A: Very strong / Fairly strong / Not very strong

### **Left-right scale**

Q: In politics people sometimes talk of "left" and "right". On the scale below, where 0 means the left and 10 means the right, where would you place yourself?

A: (Left) 0 ... (Right) 10 / No placement / Don't know

### **Future household economy**

Q: Thinking about the future economic situation of your household... how do you think the financial situation of your household will change over the next 12 months?

A: Will get a lot worse / Will get a little worse / Will stay the same / Will get a little better / Will get a lot better / Don't know

### **Information gathering on referendum** (combination of the answers to the following two questions)

Q: In the last 6 months, how often, if at all, did you...

...watch news or programmes about Scottish independence on TV channels, either on a TV set or on the internet?

...read about Scottish independence on newspapers (either in paper or on-line versions) or news websites? A:

Several times a day (7) / Every day (6) / Several times a week (5) / At least once a week (4) / A couple of times a month (3) / Once a month (2) / Less than once a month (1) / Never (0)

**An example of two texts provided in the experiment. The first one contains arguments in favour of independence, while the second one contains arguments against.**

### **Energy-rich Scotland would be wealthier as an independent state**

Scotland disposes of the largest oil reserves in the EU as well as huge renewable energy potential. Investment in the oil and gas sector is at a record level of £13.5 billion this year, and planned future investment is estimated at £100 billion. Production is expected to extend beyond the middle of the century. In terms of wholesale value, North Sea reserves could be worth £1.5 trillion – a greater value than the amount extracted to date. With 25% of Europe's total tidal energy potential, 25% of its wind energy potential and 10% of its wave energy potential, Scotland has also a huge potential in renewable energy. This has the power to reindustrialise Scotland, bringing more jobs and greater prosperity. However, under successive Westminster governments this energy wealth has not been invested, instead it has gone straight to the UK Treasury. Independence gives Scotland the opportunity to harness this energy wealth for the people of Scotland. All the evidence demonstrates that an independent Scotland would be one of the wealthiest countries in the world. It would be the 14th wealthiest nation in the developed world by GDP per head of population, four places higher than the UK as a whole.

### **Breaking the UK single market puts Scottish business at risk and may cost many jobs**

As it stands, the UK is a true domestic single market with no internal barriers. Splitting this market, by introducing a border of whatever form, will introduce a barrier to the free flow of goods, capital and labour to the detriment of firms, workers and consumers in both states and risks making it more challenging to attract overseas investors. The unified market is viewed as a key driver for businesses in Scottish sectors such as financial services, professional services, energy, food and drink. Just a 1 per cent reduction in exports by Scotland to the rest of the UK would equate to £450 million worth of sales. Indeed, some of Scotland's largest companies have warned that a Yes vote in the independence referendum would guarantee higher costs for business. There is too much uncertainty over a number of factors, including which currency and central bank Scotland would use, the impact of EU membership talks, and the effects of two diverging markets replacing the UK's single market. Banks and insurers would face pressure to move headquarters to a stronger fiscal state with a more certain regulatory backdrop. It's clear that leaving the UK would put at risk the jobs of thousands of Scots.

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