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Using the SIRDE Model of Social Change to Examine the Vote of Scottish Teenagers  
in the 2014 Independence Referendum

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There are 7286 words in the body of the text.

Correspondence concerning this paper should be addressed to Peter R. Grant, Psychology Department, University of Saskatchewan, 9 Campus Drive, Saskatoon, SK, S7N 5A5, Canada. E-mail: [peter.grant@usask.ca](mailto:peter.grant@usask.ca). Preliminary results from this study were presented at the joint annual meeting of the Developmental and Social Psychology sections of the British Psychological Society, Manchester, September 2015.

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### Abstract

Five hundred and seventy three Scottish high school students were surveyed in the two months following the 2014 referendum on Scotland's independence. We used the **Social Identity, Relative Deprivation, collective Efficacy (SIRDE)** model of social change to examine the social psychological factors that should have influenced the voting choices of these teenagers. Structural equation modeling indicated that the SIRDE model fit the data and largely supported four sets of hypotheses derived from the model. Specifically, i) those with a stronger Scottish identity, ii) those who felt frustrated and angry that Scottish people are discriminated against in British society, and iii) those who believed that Scottish people are not able to improve their relatively poor social conditions within the United Kingdom (a lack of collective efficacy) were more likely to hold separatist beliefs. Further, the relationships between identity, relative deprivation, and collective efficacy, on the one hand, and voting for Scotland's independence, on the other, were fully mediated by separatist social change beliefs. Consistent with the specificity of the model, neither political engagement nor personal relative deprivation were associated with voting choice, whereas the latter was associated with lower life satisfaction. The implications and limitations of these findings are discussed.

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*“It is impossible to have visited Scotland in recent days and not to have been exhilarated by the sheer vigour of democratic engagement. Scotland at the moment is what a democracy is supposed to be: a buzzing hive of argument and involvement... for once, the people have some power.”* Fintan O’Toole, The Guardian, September 12, 2014.

In the months before the independence referendum on September 18, 2014 there was excitement in the air throughout Scotland. Intense debates between passionate pro-independence, “*Yes Scotland*” supporters and the equally passionate pro-union, “*Better Together*”, supporters were taking place throughout the country. Consequentially, an extraordinarily high 84.6% of registered voters (3,623,344 people) voted in the referendum with 44.7% of them voting for Scotland’s independence (<http://www.bbc.com/news/events/scotland-decides/results>).

### **The Youth Vote**

One unique aspect of this independence referendum was the inclusion of 16 and 17 year olds as part of the electorate. Although critics argued that they lacked the maturity to make an informed decision, there was widespread acknowledgement immediately after the referendum that the inclusion of these young people was wise. Not long afterwards, a bill was passed in the Scottish parliament to include 16 and 17 year olds in the electorate of all future Scottish parliamentary elections.

Political attitudes and intentions become established in late adolescence and early adulthood (Campbell, 2006; Sears & Brown, 2013) and that crystallization is often triggered by important political events (Sears & Valentino, 1997). Political attitudes and intentions developed in this impressionable period tend to persist throughout much of adult life (Alwin, Cohen &

Newcomb, 1991; Sears & Brown, 2013). Nevertheless, “there remains important weaknesses in our knowledge of youth and politics (Niemi & Klingler, 2012, p. 34). The importance of studying factors that influenced 16 and 17 year olds’ votes was also methodological and historical because it was the first time that this age group had been enfranchised and because the 2014 referendum was a uniquely important political event in Scottish history.

More practically, we wished to build upon and extend a theoretical model and findings from data from a representative sample of 15 to 19 year olds living in Kirkcaldy, Scotland in 1988 (Abrams & Grant, 2012).<sup>1</sup> Those young people’s *intention* to vote for the Scottish National Party (SNP), a minority party at the time, was predicted by a combination of factors specified by a particular integration of social identity theory and relative deprivation theory. In the present study, we examined the actual voting *behaviour* of teens in a transformed political context in which the Scottish National Party was greatly invigorated, using a new, more developed and comprehensive version of this theoretical model.

### **Separatism as a Social Change Strategy**

Our investigation was designed to shed light on the social psychological factors that influenced the 16 and 17 year olds in the electorate whose political goal was separatism and who, therefore, voted for Scotland’s sovereignty in the referendum (Sweetman, Leach, Spears, Pratto, & Saab, 2013). In comparison, those youth opposed to separatism were supporting the “Better Together” campaign which did not offer a clear alternative social change option for Scotland. Rather, this campaign focussed on the many and varied reasons for why Scotland should remain part of the United Kingdom ranging from the merits of being part of a relatively large Western democracy that played a significant role on the world stage to economic fears that separatism would leave Scotland and the Scottish people impoverished.<sup>2</sup> Indeed, the “Better Together”

campaign can be characterized as both negative and reactive, and it was increasingly criticized for being so as the campaign progressed: “The weakness in the strategy is that Better Together has won full marks for outlining what it opposes but no marks for outlining what it supports” (Watt, 2014).<sup>3</sup>

Social identity theory (SIT) was partly developed to account for when and why disadvantaged minority group members will or will not directly confront a dominant majority group in society even when their group is disadvantaged (Tajfel, 1978; Tajfel & Turner, 1986; Hogg & Abrams, 1988). SIT postulates that protest will be less likely if individuals can leave their disadvantaged group and work toward improving their personal circumstances. When individual mobility is blocked, minority group members may still avoid a direct confrontation with the dominant majority group by either comparing their group with another disadvantaged group, or by characterizing their group as distinctively better than the dominant group in areas that, they argue, should be valued more highly (social creativity strategy). Further, when disadvantaged minority group members do protest, research has largely examined when they engage in normative protest actions so as to achieve greater *social inclusion* for their group within society (Becker & Tausch, 2015; Grant, Abrams, Robertson, & Garay, 2015; see Van Zomeren, Postmes, & Spears, 2008 for a meta-analysis of this work).

Theoretically, social identity theory specifies that collective protest actions which have social inclusion as a goal will occur when disadvantaged minority group members perceive that their group’s social status is insecure; that is, illegitimately low, but with realistic possibilities for improvement (status instability). Support for separatism is different, however. Here disadvantaged minority group members perceive that their group’s status is illegitimately low, but that there is very little possibility for improvement (stability). According to SIT, these

circumstances stimulate development of a social change belief structure which consists of “new ideologies and attitudes” (Tajfel, 1978, p. 54) such that disadvantaged group members start to believe that separatism is the only viable social change option. Thus, social action becomes motivated by a desire for *social exclusion* (Abrams & Grant, 2012).

### **The Social Identity, Relative Deprivation. Collective Efficacy (SIRDE) Model**

Voting for Scotland’s independence is not something that Scots took lightly. After all, had the vote been successful, then the resulting social changes would have been substantial and potentially costly. Such a vote was, therefore, likely to be motivated by a variety of convergent factors. From a social psychological perspective, some of these factors are specified within three theories: **Social Identity** theory, **Relative Deprivation** theory, and a version of resource mobilization theory that emphasizes the role of perceived collective **Efficacy**. The SIRDE model integrates these theories to postulate that a number of social psychological variables combine to influence active participation in a variety of collective actions in order to achieve social change. The model is new and has been tested in a study of skilled Canadian immigrants who protested in order to achieve greater inclusion into the Canadian work force (Grant et al., 2015) and, partially, in an earlier study of Canadian immigrants (Grant, 2008) and in a study of Scottish teenagers’ intentions to vote for the Scottish National Party (Abrams & Grant, 2012). The present study is innovative because, for the first time, it includes the collective efficacy component to predict separatism and because it is being used to predict separatist behaviour rather than intentions (the referendum vote). The major components of the model are set out below in the form of four sets of hypotheses involving relative deprivation, social identity, social change beliefs, and collective efficacy respectively (see Figure 1).

**Relative deprivation.** An early approach to predicting involvement in collective protest actions was developed as part of relative deprivation theory (Runciman, 1966; Stouffer, Suchman, DeVinney, Starr, & Williams, 1949; see also Pettigrew, 2015), a theory that now has a great deal of empirical support (Smith, Pettigrew, Pippin, & Bialosiewicz, 2012; Walker & Pettigrew, 1984; Walker & Smith, 2002). Specifically, the theory holds that people will actively engage in protest actions when they experience collective relative deprivation (CRD): namely when they make an intergroup social comparison and perceive that their group has been unjustly deprived relative to another relevant comparison group. Collective relative deprivation has a cognitive and an affective component. The cognitive component (cogCRD) is a person's belief that his/her group is disadvantaged as it has received less of a desired outcome than expected relative to a relevant outgroup. The affective component (affCRD) is the person's perception that his/her group's disadvantage is unfair along with feelings of anger, frustration, and resentment at this injustice. Relative deprivation theory specifies that cogCRD results in affCRD which, in turn, is the proximate determinant of involvement in protest actions and the empirical evidence supports this hypothesized causal chain (Abrams & Grant, 2012; Dion, 1986; Dube-Simard & Guimond, 1986; Grant et al., 2015; Grant & Brown, 1995; Kawakami & Dion, 1995; Pettigrew, 2002; Smith et al., 2012).

Smith et al's (2012) meta analysis confirmed that justice-related affective measures were most strongly predictive of involvement in protest actions. However, studies measured either the respondents' negative emotional reaction to their group's disadvantage or their feeling that this disadvantage is unfair, but not both. Indeed, to date, only work by Grant (Grant et al., 2015) included separate measures of these two aspects of affCRD and cogCRD, and none have done so when studying social change beliefs. We, therefore, examined the relationship between cogCRD



and the two separate aspects of affCRD again by testing Hypothesis 1: *The more that Scots perceive that Scottish people are disadvantaged relative to the English, the more that they will believe that Scottish people are being discriminated against and the more they will feel angry and frustrated in response to this perceived disadvantage.*<sup>4</sup>

**Relative deprivation, identity, and social change beliefs.** It is sometimes overlooked that Tajfel originally described social identity theory (SIT) as “an attempt to articulate some of the social psychological processes which are responsible for the genesis and functioning of relative deprivation” (Tajfel, 1978, p. 67). He argued that the desire for major societal change is the result of the development of a *social change belief structure* (in this case, a separatist ideology). In the SIRDE model, we use these ideas to postulate that those who experience affective CRD are most likely to develop a social change belief structure (Abrams & Grant, 2012). Thus, Scots will be *more likely to hold separatist beliefs and, as a result, vote in favour of Scotland becoming an independent country if: they more strongly believe that Scottish people are being discriminated against by the English* (Hypothesis 2a), *and they feel more angry and frustrated because they believe that Scottish people are deprived relative to the English* (Hypothesis 2b). We also expected that the two aspects of affCRD would be related such that *the more that Scots perceive that Scottish people are being discriminated against, the stronger will be their anger and frustration* (Hypothesis 2c).

Social identity theory provides another reason why disadvantaged minority group members work to achieve fundamental social change (Tajfel & Turner, 1986). Those who strongly identify with their disadvantaged group are particularly likely to act on its behalf in the face of injustices. This is because their group identity is an important part of their self-concept and so they should be unwilling to leave their group but, instead, work to address these injustices

through involvement in collective action. If the minority group's status is illegitimately low and this status is hard to change (stable), SIT explicitly postulates that minority group members will come to believe that only a drastic societal change can improve their group's status (a social change belief structure) and, therefore, will support separatism as the only positive alternative for their group's future. That is, we argue that social identity theory explicitly proposed that a social change belief structure will mediate the identity – collective action relationship when members of a disadvantaged group believe that their group's status is illegitimately low and stable (Abrams & Grant, 2012). Moreover, as a member of a disadvantaged group, the more strongly members identify with the group, the more strongly they will feel it has been treated unfairly and the more intense will be their negative emotional reaction of anger, resentment, and frustration in response to their group's disadvantage. Indeed, a large body of evidence supports this theorizing meta-analytically (van Zomeren, Postmes, & Spears, 2008), although the separate influence of group identification on the two aspects of affective CRD has only been examined in two studies (Grant, 2008; Grant et al., 2015). This implies that, Hypothesis 3a: *the more that Scots strongly identify with Scotland, the more likely they are to develop a separatist social change belief structure and, as a result, vote in favour of Scotland's independence* and, hypothesis 3b: *the more that Scots identify with Scotland, the more likely they are to believe that their group is being discriminated against and to react emotionally with anger and frustration.*<sup>5</sup>

In an earlier study, we obtained initial support for hypotheses 2 and 3 by showing that separatist beliefs mediated the relationship between affective CRD and Scottish identity on the one hand, and Scottish teenagers' intentions to vote for the SNP on the other (Abrams & Grant, 2012). This study did not measure the two aspects of affective CRD separately, however.

**Collective efficacy hypotheses.** The meta-analysis by Van Zomeren and colleagues (2008) shows that the evidence overwhelmingly supports a central hypothesis of Resource Mobilization theory (Klandermans, 1997, 2004); namely that the more disadvantaged group members believe that their group has the capacity to effect positive change (perceived collective efficacy), the more likely they are to participate in collective protest actions (see also Abrams & Randsley de Moura, 2002; Sturmer & Simon, 2004; Van Zomeren, Leach, & Spears, 2012). However, most of the studies in this review concern protest actions to improve the situation of a disadvantaged minority group within a society (protests to achieve greater *social inclusion*). This neglects the situation in which disadvantaged group members believe that their group's illegitimately low social status is very hard to change (stable) and who believe that political action to promote inclusion is unlikely to be efficacious. Indeed, in this instance, we argue that disadvantaged group members are most likely to believe that low efficacy for inclusion justifies a separatist social change belief structure and engage in political protest actions designed to fundamentally change the nature of intergroup relations (protests to achieve greater *social exclusion*). Applying this argument to the vote for Scotland's sovereignty, Hypothesis 4 is that *the less that Scots believe that political actions by representatives of the Scottish people will be efficacious within the United Kingdom, the more likely they are to hold separatist beliefs and, as a result, the more likely they are to vote in favour of Scotland's independence.*

A contrasting possibility is suggested by the theory that a strong identity can empower disadvantaged group members to work together toward achieving a better future for their group (Drury & Reicher, 2000, 2005; Klein, Spears, & Reicher, 2007; Reicher & Hopkins, 2001). Indeed, a meta-analysis indicates that a disadvantaged group identity does engender collective efficacy (van Zomeren et al., 2008). Hypothesis 5a is, therefore, that *the more that Scots identify*

*with Scotland, the more they will believe that political actions by representatives of the Scottish people will be efficacious.*

Also in line with these ideas, Grant et al. (2015) argued that, if individual action was unlikely to overcome systemic discrimination, disadvantaged group members may be particularly likely to believe that group actions would be efficacious when facing such discrimination. Hypothesis 5b is, therefore, that *the more Scots believe that Scottish people are discriminated against, the more they will believe that political actions by representatives of the Scottish people will be efficacious in reaction to this discrimination.* Note, however, that hypotheses 5a and 5b are both derived from contexts in which the minority group is seeking inclusion rather than exclusion.

## **Method**

### **Respondents**

Participants were 573 Scottish youth (48.8% were female) attending high school in Dundee or nearby in Angus and all eligible to vote in the Scottish independence referendum because they were either 16 (55.0%), 17 (44.6%) or 18 years old (0.4%) on September 18, 2014. Thirty-five respondents did not give their date of birth, but were included in the sample because they indicated that they were eligible to vote.

Almost all respondents were born in Scotland (88.9%) and considered themselves to be Scottish (93.1%). Further, most had a parent who was born in Scotland (89.4%).

### **Procedure**

Access to schools was granted by Dundee's Director of Education and by permission from head teachers of four state high schools, and a private high school in Dundee as well as from two high schools in Angus. Five honours students and the first two authors collected data

during the two months immediately following the referendum.<sup>6</sup> Typically, the questionnaire, with a blank cover sheet to assure anonymity and confidentiality, took 30 minutes or less and was administered to the respondents during a social studies class period. Once finished, students returned the questionnaire directly to the researcher. Students were told that they were not obliged to complete the questionnaire but, if they did so, this implied their consent for our research team to use their responses.

### **Measures**

In this paper we describe only the measures that are specific to the SIRDE model. A few were new, but most were adapted from previous studies (Abrams & Grant, 2012; Grant, 2007, 2008; Grant et al., 2015).<sup>7</sup>

**Cognitive CRD.** Three new items were written to measure cogCRD. Respondents used a 5-point scale ranging from 1 = “much worse” to 5 = “much better” to answer the following three questions: “Compared to the standard of living/job opportunities/wages for English people living in England, the standard of living/job opportunities/wages of Scottish people living in Scotland is...”. These items are only weakly correlated ( $r = .19$  to  $.36$ ). In addition, 7.5% of respondents who voted answered only one or two of the three questions. Despite quite low internal consistency ( $\alpha = .51$ ), we felt that averaging valid responses to these items was acceptable because they capture the respondents’ overall experience across different types of disadvantage. Therefore, we reverse scored the questions and used the average of the valid responses as an index of cognitive CRD.

### **Affective CRD.**

**Perceived discrimination.** Four items measured perceived discrimination against Scottish people ( $\alpha = .83$ ). For example, respondents indicated their (dis)agreement, “that Scottish people “face discrimination when they look for employment” using a 5-point Likert scale.

**Negative intergroup emotions.** Respondents indicated how angry and frustrated they feel when they “compare the standard of living/job opportunities/wages of Scottish people living in Scotland with that of English people living in England” (1 = “not at all” to 5 = “extremely”). Approximately 75% of the respondents indicated that they felt both emotions with the same level of intensity and so they were very highly correlated ( $r = .88$  to  $.92$ ). This caused multicollinearity problems when the emotions were separately included in the structural equation modeling analyses. In addition, respondents tended not to rate the intensity of their emotions if they did not answer the corresponding cogCRD question. Therefore, we averaged the valid responses on the angry and frustrated rating scales and used this average as an index of negative intergroup emotions.<sup>8</sup>

**Strength of Scottish identity.** A six item scale measured the respondents’ identification with Scotland ( $\alpha = .89$ ). Respondents used a 7-point response format labelled 1 = “not at all” to 7 = “extremely” to indicated, for example, the extent to which “they felt Scottish”.

**Perceived collective efficacy.** Three new items were written to measured perceived collective efficacy ( $\alpha = .83$ ). Using a 5-point Likert scale, respondents indicated the extent to which they (dis)agreed with the following statements: “Nowadays, Scottish people are the ones in control of Scotland’s future as a country”, “Together, Scottish people are the ones who decide Scotland’s future”, and “Because of their shared goals, Scottish people are the ones who have the most influence over the direction taken by Scotland as a country”.

**Social change beliefs.** Three items measured the extent to which the respondents felt that Scottish independence was necessary in order to improve the lives of Scottish people ( $\alpha = .84$ ). For example, respondents indicated the extent to which they (dis)agreed with the following statement: “People in Scotland will only get a fair deal if Scotland is an independent country” using a 5-point Likert scale. Notice that these beliefs do not imply a particular voting intention. Specifically, the respondents could hold these beliefs, but vote against separation if they were convinced by arguments made during the “Better Together” campaign, or vote for separation if they were more convinced by the arguments of the “Yes, Scotland” campaign.

**The vote.** Respondents were asked to check a box indicating how they voted on the referendum question, “Should Scotland be an independent country?”, or they indicated that they did not vote.

**Status.** Respondents were asked, “Compared with the status of English people in British society, would you say the status of Scottish people is”: 1 = “much lower” to 5 = “much higher” with 3 labelled “the same”. Then the illegitimacy and stability of this status were measured by the questions, “Compared to the status of English people in Britain, would you say the status of Scottish people is acceptable and fair or not?” (1 = “very unfair and unacceptable” through 3 = “neutral” to 5 = “very fair and acceptable”) and “How much do you think the status of Scottish people in society could change in the next few years?” (1 = “not at all” to 5 = “very much”).

**Political Engagement.** Political engagement was measured by the question: “Generally, how interested are you in politics?” (1 = “not at all interested” to 5 = “very interested”).

**Political Activity prior to the Referendum.** Respondents were asked about their involvement in either the “Yes Scotland” or “Better Together” political campaign during the 16 weeks prior to the referendum. Specifically, they indicated whether they had signed a petition,

took part in a neighbourhood fundraising event, attended an information meeting, helped distribute leaflets, attended a public meeting, and took part in a public demonstration. Then they described other political activities that they had participated in. Many respondents (21.5%) wrote about a variety of political actions including campaigning door-to-door, attending debates, and using social media. We summed the political activities of each respondent to create a score that could range from 0 to 7.

**Egoistic relative deprivation (ERD).** A new item was written to measure the respondents' personal feelings of deprivation (ERD): "Comparing my own standard of living and how much money I have with that of other Scottish people my age, I think I have..." (1 = "much less" through 5 = "much more", reverse scored).

**Life satisfaction.** Two commonly-used survey items (e.g., Lucas & Donnellan, 2012) measured life satisfaction: "how satisfied are you with your life as a whole nowadays?" and "how happy would you say you are?" (1 = "very dissatisfied/unhappy" to 5 = "very satisfied/happy", reverse scored). The responses to these questions were highly correlated ( $r = .70, p < .001$ ) and were averaged.

## Analysis

EQS version 6.2 was the structural equation modeling (SEM) program used to test the theoretical models shown in Figure 1 (Bentler & Wu, 2002). The SEM analyses only included the 503 respondents (87.8%) who said that they were Scottish and had cast a vote in the referendum. Because some of the variables did not have a normal distribution, the Satorra-Bentler scaled  $\chi^2_{S-B}$  and adjustments to the standard errors of the path coefficients were calculated so as to correct their statistical significance using the maximum likelihood criterion for convergence (Hu, Bentler, & Kano, 1992; Tabachnick & Fidell, 2013). Given the large



sample size, we used  $p < .01$  as the criterion for deciding whether a path coefficient or correlation was significantly different from zero.

### Results

Before describing the results of the structural equation modelling analyses, it is important to note that many respondents agreed or strongly agreed that Scottish people are treated unfairly by the English (42.4%) and that Scottish people are accorded a lower status than the English in the United Kingdom (67.7%). Further, about half of the respondents (49.7%) felt that Scottish people are discriminated against by the English. This means that relative deprivation theory can be used to interpret the responses of this sample of Scottish teenagers because clearly they felt that they are members of a disadvantaged group within British society.

Interestingly, those who voted for Scotland to become a sovereign nation believed that Scottish people had a lower status than those who voted for Scotland to remain in the United Kingdom;  $M_{\text{yes}} = 1.97$ ,  $M_{\text{no}} = 2.41$ ,  $t(491) = 7.44$ ,  $p < .001$ . Further, those who voted for Scotland's independence felt that this lower status was illegitimate, whereas those who voted against were neutral;  $M_{\text{yes}} = 2.30$ ,  $M_{\text{no}} = 2.98$ ,  $t(488) = 10.58$ ,  $p < .001$ . Finally, both groups believed that the status of Scottish people would be relatively stable over the next few years;  $M_{\text{yes}} = 2.82$ ,  $M_{\text{no}} = 2.87$ ,  $t(491) < 1$ , *ns*.

The correlation matrix showing the relationships among the variables in the model is given in Table 1. This table indexes constructs by averaging the individual items that make up each scale. In contrast, the SEM used the individual items in each scale as multiple indicators of the latent construct.<sup>9</sup>

First, consider the test of the SIRDE model of social change (Figure 1 above the horizontal dashed line). This theoretical model is a good fit and reproduces the variance-

covariance matrix among the measured variables well: robust CFI = .97, sRMR = .056,  $\chi^2$ s-

$\chi^2(160, N = 450) = 314.44, p < .001$ .<sup>10</sup> We, therefore, examined the individual path coefficients to see if the specific hypotheses derived from the SIRDE model were supported.

### **The Relative Deprivation Hypotheses**

As Figure 2 shows, there is strong support for the classic relative deprivation hypothesis (hypothesis 1) that minority group members who perceive that their group is disadvantaged (cognitive CRD), will tend to believe their group's disadvantage is unfair and feel the intergroup emotions of anger and frustration.

### **Relative Deprivation, Identity, and Social Change Beliefs**

There was considerable support for the hypotheses linking affective CRD to voting behaviour through social change beliefs (Figure 2). There were significant paths from perceived discrimination against Scottish people to separatist beliefs (hypothesis 2a) and from the intergroup emotions of anger and frustration to these beliefs (hypothesis 2b). Hypothesis 2c was supported by the significant path from perceived discrimination against the Scots by the English to a more intense negative emotional reaction of anger and frustration.

In support of hypothesis 3a, respondents with a stronger Scottish identity were more likely to endorse separatist beliefs, and in support of hypothesis 3b, respondents with a strong Scottish identity tended to feel the intergroup emotions of anger and frustration more intensely and to believe more strongly that Scots are discriminated against by the English. Finally, there was support for both hypotheses 2a, 2b, and 3a in that the path from separatist beliefs to voting for Scottish independence was very strong ( $\beta = .88, p < .001$ ).

### **The Collective Efficacy Hypotheses**

We hypothesised that the less the respondents felt that Scottish people had political control of Scotland's future, the more they would hold radical separatist beliefs (hypothesis 4). As Figure 2 shows, this hypothesis was strongly supported by a strong, significant and negative path coefficient from collective efficacy to separatist beliefs ( $\beta = -.38, p < .001$ ).

Counter to hypothesis 5a, however, the path from Scottish identity to collective efficacy was significantly negative ( $\beta = -.16, p < .001$ ). That is, a stronger Scottish identity was associated with less belief in the Scottish people's ability to control Scotland's future. Further, counter to hypothesis 5b, perceived discrimination was associated with lower perceived collective efficacy ( $\beta = -.32, p < .001$ ).

### **Separatist Ideology as a Mediator**

Hypotheses 2a, 2b, 3a, and 4 all postulate that there will be a relationship between, on the one hand, affective CRD, Scottish identity, and collective efficacy and, on the other hand, the decision to vote for an independent Scotland. Importantly, we propose that these relationships should all be fully mediated by separatist social change beliefs. Consequently, we nested the SIRDE model within a model containing four additional direct causal paths from Scottish identity, the two components of affective CRD, and perceived collective efficacy to voting behaviour.

The results showed that none of these direct paths were statistically significant ( $\beta = .02$  to  $-.04$ ). Moreover, adding these four direct paths did not significantly improve the goodness-of-fit of the SIRDE model;  $\chi^2_{S-B}(4, N = 450) = 1.57, ns$ . That is, the evidence from this study supports the general hypothesis that a social change (separatist) belief structure is a full (and parsimonious) mediator which psychologically integrates the effects of identity, affective CRD, and collective efficacy on voting behaviour. Nevertheless, the measure of voting behaviour is

retrospective and so this analysis only provides suggestive evidence in support of this mediated path.

### **The Specificity of the SIRDE Model**

The “fit” hypothesis, which has strong empirical support from recent meta-analyses, is that egoistic (personal) relative deprivation (ERD) should have separate and independent effects from collective relative deprivation (Smith & Ortiz, 2002; Smith et al., 2012). In order to test this hypothesis, we added a measure of ERD and life satisfaction into the SIRDE model. Figure 1 shows this expanded model and the causal paths (the dashed grey arrows) that should be non-significant if the effects of CRD and ERD are independent. Figure 2 gives the results of the SEM analysis of this model which shows that it is a good fit to the data: robust CFI = .95, sRMR = .072,  $\chi^2_{S-B}(196, N = 447) = 425.34, p < .001$ . Further, the magnitude of the path coefficients among the variables specified by the SIRDE model are, for the most part, identical to those obtained earlier and, as expected, ERD is associated with lower life satisfaction ( $\beta = .24, p < .001$ ).

Importantly, there is substantial, but not complete independence between CRD and ERD. On the one hand, while ERD does not seem to be related to past voting behaviour directly ( $\beta = .01, ns$ ), it has a small influence on the development of separatist social change beliefs such that those who felt personally deprived were more likely to have developed such beliefs ( $\beta = .13, p < .001$ ). On the other hand, the results suggest that the negative intergroup emotions of anger and frustration do not have an impact on life satisfaction ( $\beta = .11, ns$ ), but perceived discrimination against the Scots by the English does negatively affect life satisfaction ( $\beta = .32, p < .001$ ). With this one exception, therefore, the fit hypothesis is largely supported.

More generally, Duncan and Stewart (2007) suggest that political engagement should predict general political activity. Therefore, respondents who were interested in politics should be more likely to campaign actively prior to the referendum. Nevertheless, both the pro-independence and the anti-independence campaigns were supported by politically active individuals; i.e., political engagement should not be related to voting choice. In contrast, the SIRDE model predicts that those with a social change belief structure would be the ones most likely to vote for Scotland's independence. In line with these predictions, separatist beliefs were more strongly associated with voting for Scotland's independence, whereas political engagement was not ( $\beta = .89$  versus  $\beta = .06$  respectively, Figure 2). Conversely, political engagement was a better predictor of involvement in campaign activities than separatist beliefs;  $\beta = .35, p < .001$  versus  $\beta = .16, p < .01$  respectively, robust CFI = .96, sRMR = .055,  $\chi^2_{S-B}(160, N = 469) = 328.13, p < .001$ .<sup>11</sup> Taken together, this evidence attests to the specificity of the SIRDE model.

### **Discussion**

The SIRDE model of social change elaborates and adds to an earlier model which considered how identity and collective relative deprivation act as motivators for protest actions by minority group members via social change beliefs (Abrams & Grant, 2012). The only previous test of the complete SIRDE model examined normative political actions designed to facilitate the inclusion of skilled immigrants into the Canadian work force (Grant et al., 2015). In contrast, the present study was concerned with the question of why Scottish teenagers voted for Scotland's independence; that is, their country's exclusion from the United Kingdom. Had the outcome of the referendum been "Yes" to independence, it would have put into motion a radical, non-normative political solution to Scottish people's grievances as the political structure of British society fundamentally changed. Thus, the study allowed a real world test of an important,

but neglected, hypothesis developed by Tajfel (1978; Tajfel & Turner, 1986); namely that minority group members will only support such a radical political solution if they have developed a social change belief structure (Abrams & Grant, 2012). Given this distinction, it is important to emphasize how well the SIRDE model as a whole was supported by the data (Figure 2).

Notably, political engagement *per se* was not significantly associated with the vote for Scottish independence, but did predict participation in the referendum campaign better than separatist beliefs. Together, this evidence is consistent with the SIRDE model in that it suggests that a specific (Scottish) identity and a specific (Scottish – English) intergroup comparison along with a sense that Scottish people are unable to effect positive social changes benefitting Scotland within British society (lack of collective efficacy) led to the development of a separatist ideology. The evidence is also consistent with the notion that the development of a separatist ideology was a key social psychological factor that influenced the referendum vote. Clearly, there is a need for prospective field studies to replicate these results, but they do suggest that the SIRDE model has promise.

The analysis which included egoistic (interpersonal) relative deprivation and life satisfaction into the SIRDE model also supports its specificity because the effects of ERD on life satisfaction are largely distinct from the effects of affective CRD on separatist beliefs. These results reinforce comparable findings obtained in an earlier study on intentions to vote for the SNP (Abrams & Grant, 2012). Moreover, the present research revealed that perceived discrimination, as one aspect of affective CRD, had a strong negative effect on life satisfaction, consistent with substantial meta-analytic evidence that perceived discrimination can have a negative effect on well-being (Pascoe & Smart Richman, 2009; Schmitt, Branscombe, Postmes,

& Garcia, 2014). Our results add to this literature by providing direct evidence for the contention made by Schmitt and his colleagues (2014) that, “while recognizing discrimination harms individual psychological well-being, it might also lead to collective resistance that reduces the pervasiveness and severity of discrimination” (p. 937).

### **Collective Relative Deprivation**

We found strong support for the classic relative deprivation hypothesis that cognitive CRD directly influences affective CRD (see also Smith et al., 2012), and the present evidence also shows that the two aspects of affective CRD -- perceived discrimination and the intergroup emotions of anger and frustration -- measured separately, are both predicted by cognitive CRD.

There was also strong support for Tajfel’s (1978) neglected hypothesis that the affective component of CRD would be positively related to the espousal of a social change belief structure. Extending results from our earlier work on intentions to vote for the SNP (Abrams & Grant, 2012), the present study shows that both aspects of affCRD, perceived discrimination and the intergroup emotions of anger and frustration, separately predicted the endorsement of separatist beliefs (Hypotheses 2a and 2b). To our knowledge, this is the first time the separate influence of these two aspects of CRD on the endorsement of a social change belief structure has been examined.

Recently, Grant et al. (2015) showed that perceived discrimination was negatively related to engagement in normative political protest actions designed to achieve greater inclusion of skilled immigrants into the Canadian work force. Thus, support for the hypothesis that perceived discrimination will result in a stronger endorsement of separatist beliefs (hypothesis 2a) and, consequently, a greater likelihood of voting for Scotland’s independence is counter to this earlier finding. One way to reconcile these contradictory findings is to infer that perceived

discrimination against a disadvantaged minority group discourages normative protest actions for social inclusion, but encourages the development of a social change belief structure which leads to non-normative protests actions promoting social exclusion. If replicated, this pattern of results offers a persuasive argument for why social cohesion and harmony are more readily sustained by factors, such as human rights legislation, which inhibit discrimination within democratic societies.

### **Social Identity**

van Zomeren et al's meta-analysis (2008) concluded that identification with a disadvantaged minority group influences engagement in political protest actions, both directly and through enhancement of a sense of injustice. Our findings extend this conclusion with distinctive SIRDE model predictions pertinent to minority group identity. In particular, our findings suggest that disadvantaged minority group members who strongly identify with their group will be particularly likely to support a fundamental social change to the structure of society if they develop a social change belief structure (hypothesis 3a). Further, in showing that those with a strong Scottish identity were more likely to perceive the treatment of the Scots by the English as discriminatory and to react with anger and frustration (the two aspects of affective CRD), we strengthened the body of evidence supporting the role of social identity and collective relative deprivation as key variables in the development of separatist beliefs.

### **Collective Efficacy**

The SIRDE model proposes that if members of a disadvantaged minority group (e.g., Scots) do not believe that their collective political actions to improve their group's low status can be efficacious as long as the majority holds power (e.g., the Westminster parliament in the United Kingdom), then they will be more likely to develop a social change belief structure and



advocate for radical changes to the structure of that society (e.g., separatism). The results clearly support hypothesis 4, derived from this theorizing, and are consistent with recent work by Becker and Tausch (Becker & Tausch, 2015; Tausch et al., 2011) who have developed a model explaining why people become involved in non-normative forms of protest actions. Building upon work by Wright (Wright & Tropp, 2002; Wright, Taylor, & Moghaddam, 1990), these authors argue that non-normative political actions are taken by minority group members when they believe that they are unable to change their group's disadvantaged social position through normative means. Independent of whether a political action is normative, the SIRDE model, and present evidence, places emphasis on whether the goal of the disadvantaged group is for full *inclusion* into the larger society, or a fundamental restructuring of the larger society which can include the disadvantaged group's voluntary *exclusion* (see also Sweetman et al., 2013).

Becker and Tausch (2015; Tausch et al., 2011) postulate that contempt rather than anger motivates involvement in non-normative actions, particularly violent, non-normative protest actions. Voting in the referendum is different, however, because it is a non-violent, normative political action in support of a fundamental, non-normative social change. And, for the Scottish teenagers in our study, the development of separatist beliefs and, in turn, the vote for independence appeared to be motivated by anger and frustration as relative deprivation theory would predict. We did not measure contempt in our study, nor do we believe that our sample of Scottish teenagers were radicalized, so clearly there is a need for more research on this important topic. Our results do suggest, however, that it is important for members of disadvantaged groups to believe that they can effect social changes which would improve the social conditions of their group, if we want to encourage them to participate in, rather than turn against society.

The contrasting hypotheses involving collective efficacy were not supported. The SIMCA model (van Zomeren et al., 2008), and the results of a large scale meta-analysis from which it was derived, shows that minority group identity is generally a positive influence on feelings of collective efficacy (hypothesis 5a). We obtained the reverse, however. One explanation could be that we did not measure all facets of the respondents' sense of collective efficacy. Participants may have felt that they could not influence the British government's decisions, but that they could and do influence the decisions made in the devolved Scottish parliament, particularly if these decisions are made by the Scottish National Party. This is certainly suggested by the great success of this separatist political party in recent years. Alternatively, we may have obtained this finding because we measured collective efficacy after the referendum vote. Those who voted for Scotland to become independent may well have justified or rationalized their vote by indicating that Scottish people have very little political influence within the United Kingdom.

We also obtained findings contrary to hypothesis 5b which suggests that perceived discrimination resulted in the respondents feeling that Scottish people are not as able to influence the British government. Our *a priori* argument was that disadvantaged group members are more likely to believe that working together collectively against systemic discrimination should be efficacious. However, it may be that, in the face of a long history of such discrimination, as is the case in Scotland, there is a collective sense that nothing much can be done within the current political system. Taken together, the lack of support for hypotheses 5a and 5b indicate that more research is necessary to examine the role of collective efficacy within the SIRDE model.

### **Limitations and concluding remarks**

Conclusions from the present evidence are constrained by the fact that the vote had already taken place when the respondents were questioned. Knowing how they had voted may well have influenced their responses to the survey questions. Nonetheless, most of the relationships found among the variables in the model were in the hypothesized direction and are highly consistent with those obtained from comparable data collected 25 years earlier (Abrams & Grant, 2012). The high correlation between social change beliefs and voting choice reflects how firmly these beliefs were held (and the long and intense campaign prior to the referendum), and demonstrates the powerful role of psychological processes mediating between identity, deprivation and efficacy on the one hand, and political behavior on the other. Further, the specificity of the SIRDE model and the fact that it demonstrates that ERD primarily affects life satisfaction while CRD affects separatist beliefs are strengths. The evidence is consistent with the prediction that separatist beliefs mediate the relationship between affective CRD, minority group identity and collective efficacy, on the one hand, and voting behaviour, on the other. We recognise, however, that the SIRDE model needs to be tested in further research using a variety of samples and contexts and using prospective or experimental designs.

Only one prior study has tested the SIRDE model in its entirety (Grant et al., 2015). Whereas that study showed that engagement in normative protest actions by skilled immigrants was predicted directly by affective CRD, identity, and collective efficacy, the current study suggests that voting for a non-normative, radical political solution (separatism) was predicted indirectly by these same variables through the development of a social change belief structure. Taken together, the two sets of findings support our claim that models of social change predicting involvement in collective protest actions need to distinguish predictions for actions taken so as to achieve more independence from mainstream society (social exclusion) from

actions taken so as to achieve more acceptance as full and equal members of society (social inclusion). In this regard, our research suggests that Tajfel (1978) was right to emphasize that the former is dependent upon the development of a social change belief structure which, in this instance, meant endorsement of a separatist ideology. Further, support for the crucial mediating role of social change beliefs in predicting support for separatism in the SIRDE model is consistent with and adds to the findings obtained by Abrams and Grant (2012) on teenagers' intentions to vote for the SNP in 1988. Therefore, we believe that the SIRDE model shows great promise as a social psychological model of social change, and we hope and anticipate that it will provide a stimulus for future research. Finally, and optimistically, the results of this study strongly suggest that 16 and 17 year olds have the political maturity to make informed voting choices, in that their voting behaviour seems to be influenced by the same social psychological factors that influence the voting behaviour of adults. Future research is needed to understand how they acquire this maturity developmentally.

## References

- Abrams, D. (1990). Political identity: Relative deprivation, social identity and the case of Scottish Nationalism. *ESRC 16–19 Initiative Occasional Papers. Paper 24*. London: U.K. Retrieved from [researchgate.net/directory/publications](http://researchgate.net/directory/publications).
- Abrams, D. & Grant, P. R. (2012). Testing the social identity – relative deprivation (SIRD) model of social change: The political rise of Scottish nationalism. *British Journal of Social Psychology, 51*, 674-689. doi:10.1111/j.2044-8309.2011.02032.x
- Abrams, D., & Randsley de Moura, G. (2002). The psychology of collective political protest. In V. C. Ottati, R. S. Tindale, J. Edwards, D. O’Connell, E. Posavac, E. Suarez-Balcazar, L. Heath & F. Bryant (Eds). *The social psychology of politics: Social psychological application to social issues, Volume 5*. (pp. 193-214). New York: Plenum Press.
- Alwin, D. F., Cohen, R. L., & Newcomb, T. M. (1991). *Political attitudes over the life span: The Bennington women after 50 years*. Madison: University of Wisconsin Press.
- Becker, J. C. & Tausch, N. (2015). A dynamic model of engagement in normative and non-normative collective action: Psychological antecedents, consequences, and barriers. *European Review of Social Psychology, 26*, 43-92. doi:10.1080/10463283.2015.1094265
- Bentler, P. M., & Wu, E. J. C. (2002). *EQS 6 for windows: User's guide*. Encino, CA: Multivariate Software.
- Campbell, D. E. (2006). *Why we vote: How schools and communities shape our civic life*. Princeton, NJ: Princeton University Press.

- Dion, K. L. (1986). Response to perceived discrimination and relative deprivation. In J. M. Olson, C. P. Herman, & M. P. Zanna (Eds.) *Relative deprivation and social comparison: The Ontario symposium, vol. 4* (pp. 159-179). Hillsdale, N.J.: Erlbaum.
- Drury, J., & Reicher, S. (2000). Collective action and psychological change: The emergence of new social identities. *British Journal of Social Psychology, 39*, 579 – 604.  
doi:10.1348/014466600164642
- Drury, J., & Reicher, S. (2005). Explaining enduring empowerment: A comparative study of collective action and psychological outcomes. *European Journal of Social Psychology, 35*, 35 – 58. doi: 10.1002/ejsp.231
- Dube-Simard, L. & Guimond, S. (1986). Relative deprivation and social protest: The personal – group issue. In J. M. Olson, C. P. Herman, & M. P. Zanna (Eds.) *Relative deprivation and social comparison: The Ontario symposium, vol. 4* (pp. 201-216). Hillsdale, N.J.: Erlbaum.
- Duncan, L. E., & Stewart, A. J. (2007). Personal political salience: The role of personality in collective identity and action. *Political Psychology, 28*, 143-164. doi:10.1111/j.1467-9221.2007.00560.x
- Grant, P. R. (2007). Sustaining a strong cultural and national identity: The acculturation of immigrants and second-generation Canadians of Asian and African descent. *Journal of International Migration and Integration, 8*, 89-116. doi:10.1007/s12134-007-0003-2
- Grant, P. R. (2008). The protest intentions of skilled immigrants with credentialing problems: A test of a model integrating relative deprivation theory with social identity theory. *British Journal of Social Psychology, 47*, 687-705. doi:10.1348/014466607X269829

- Grant, P. R., Abrams, D., Robertson, D. W., & Garay, J. (2015). Predicting protests by disadvantaged skilled immigrants: A test of an integrated social identity, relative deprivation, collective efficacy (SIRDE) model. *Social Justice Research, 28*, 76-101. doi:10.1007/s11211-014-0229-z
- Grant, P. R. & Brown, R. (1995). From ethnocentrism to collective protest: Responses to relative deprivation and threats to social identity. *Social Psychology Quarterly, 58*, 195-211. doi:10.2307/2787042
- Hogg, M.A., & Abrams, D. (1988). *Social identifications: A social psychology of intergroup relations and group processes*. London: Routledge.
- Hu, L.-T., Bentler, P. M., & Kano, Y. (1992). Can test statistics in covariance structure analysis be trusted? *Psychological Bulletin, 112*, 351-362. doi:10.1037//0033-2909.112.2.351
- Kawakami, K. & Dion, K. L. (1995). Social identity and affect as determinants of collective action. *Theory and Psychology, 5*, 551-577. doi:10.1177/0959354395054005
- Klandermans, B. (1997). *The social psychology of protest*. Oxford: Blackwell.
- Klandermans, B. (2004). The demand and supply of participation: Social-psychological correlates of participation in social movements. In D. A. Snow, S. A. Soule, & H. Kriesi (Eds.), *The Blackwell companion to social movements* (pp. 360-379). Oxford: Blackwell.
- Klein, O., Spears, R., & Reicher, S. (2007). Social identity performance: Extending the strategic side of SIDE. *Personality and Social Psychology Review, 11*, 28-45. doi:10.1177/1088868306294588
- Lucas, R. E. & Donnellan, M. B. (2012). Estimating the reliability of single-item life satisfaction measures: Results from four national panel studies. *Social Indicators Research, 105*, 323-331. doi:10.1007/s11205-011-9783-z

- Niemi, R. G. & Klingler, J. D. (2012). The development of political attitudes and behaviour among young adults. *Australian Journal of Political Science*, 47, 31-54.  
doi:10.1080/10361146.2011.643167
- Pascoe, E. A. & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin*, 135, 531-554. doi:10.1037/a0016059
- Pettigrew, T. F. (2002). Summing up: Relative deprivation as a key social psychological construct. In I. Walker & H. J. Smith (eds.), *Relative deprivation: Specification, development, and integration* (351-373). Cambridge, UK: Cambridge University Press.
- Pettigrew, T. F. (2015). Samuel Stouffer and relative deprivation. *Social Psychology Quarterly*, 78(1) 7–24. doi:10.1177/0190272514566793
- Reicher, S., & Hopkins, N. (2001). *Self and nation*. London: Sage.
- Runciman, W. G. (1966). *Relative deprivation and social justice*. London: Routledge and Kegan Paul.
- Schmitt, M. T., Branscombe, N. R., Postmes, T., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being: A meta-analytic review. *Psychological Bulletin*, 140, 921-948. doi:10.1037/a0035754
- Sears, D. O. & Brown, C. (2013). Childhood and adult political development. In L. Huddy, D. O. Sears, & J. S. Levy (Eds.), *The Oxford handbook of political psychology* (2nd ed., pp. 59-95). New York, N.Y.: Oxford University Press.
- Sears, D. O. & Valentino, N. A. (1997). Politics matters: Political events as catalysts for preadult socialization. *American Political Science Review*, 91, 45-65. doi:10.2307/2952258



- Smith, H. J. & Ortiz, D. J. (2002). Is it just me? The different consequences of personal and group relative deprivation. In I. Walker & H. J. Smith (eds.), *Relative deprivation: Specification, development, and integration* (pp. 91-115). Cambridge: Cambridge University Press.
- Smith, H. J., Pettigrew, T. F., Pippin, G. M., & Bialosiewicz, S. (2012). Relative deprivation: A theoretical and meta-analytic review. *Personality and Social Psychology Review, 16*, 203-232. doi:10.1177/1088868311430825
- Stouffer, S. A., Suchman, W. A., DeVinney, L. C., Starr, S. A., & Williams, R. M. (1949). *The American Soldier: Adjustment to Army Life* (Vol. 1). Princeton, NJ: Princeton University Press.
- Sturmer, S. & Simon, B. (2004). Collective action: Toward a dual pathway model. *European Review of Social Psychology, 15*, 59-99. doi:10.1080/10463280340000117
- Sweetman, J., Leach, C. W., Spears, R., Pratto, F., & Saab, R. (2013). "I have a dream": A typology of social change goals. *Journal of Social and Political Psychology, 1*, 293-320. doi:10.5964/jspp.v1i1.85
- Tabachnick, B. G. & Fidell, L. S. (2013). *Using multivariate statistics (6th Ed.)*. Boston: Allyn & Bacon.
- Tajfel, H. (1978). *Differentiation between social groups*. London: Academic Press.
- Tajfel, H. & Turner, J. C. (1986). The social identity theory of intergroup behaviour. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7-24). Chicago: Nelson-Hall.

- Tausch, N., Becker, J. C., Spears, R., Christ, O., Saab, R., Singh, P., & Siddiqui, R. N. (2011). Explaining radical group behaviour: Developing emotion and efficacy routes to normative and non-normative collective action. *Journal of Personality and Social Psychology, 101*, 129-148. doi:10.1037/a0022728
- Van Zomeren, M., Leach, C. W., & Spears, R. (2012). Protesters as “passionate economists”: a dynamic dual pathway model of approach coping with collective disadvantage. *Personality and Social Psychology Review, 16*, 180-199. doi:10.1177/1088868311430835
- Van Zomeren, M., Postmes, T., & Spears, R. (2008). Towards an integrative social identity model of collective action. A quantitative research synthesis of three socio-psychological perspectives. *Psychological Bulletin, 134*, 504–535. doi:10.1037/0033-2909.134.4.504
- Walker, I. & Pettigrew T. F. (1984). Relative deprivation theory: An overview and conceptual critique. *British Journal of Social Psychology, 23*, 301-310. doi:10.1111/j.2044-8309.1984.tb00645.x
- Walker, I & Smith, H. J. (2002). *Relative deprivation: Specification, development, and integration*. Cambridge: Cambridge University Press.
- Watt, N. (2014, September 10). Scottish independence: Five possible Better Together campaign mistakes. *The Guardian*. Retrieved from [www.theguardian.com/politics/2014/sep/09/scottish-independence-five-mistakes-better-together-campaign](http://www.theguardian.com/politics/2014/sep/09/scottish-independence-five-mistakes-better-together-campaign).
- Wright, S. C., Taylor, D. M., & Moghaddam, F. M. (1990). Responding to Membership in a Disadvantaged Group: From Acceptance to Collective Protest. *Journal of Personality and Social Psychology, 58*, 994-1003. doi:10.1037//0022-3514.58.6.994

Wright, S. C. & Tropp, L. R. (2002). Collective action in response to disadvantage: Intergroup perceptions, social identification, and social change. In I. Walker & H.J. Smith (Eds.), *Relative deprivation: Specification, development and integration* (pp. 200-236). Cambridge: Cambridge University Press.

## Footnotes

<sup>1</sup>See Abrams (1990) for the original analysis and interpretation of these data.

<sup>2</sup>We thank an anonymous reviewer for raising this issue and for suggesting that “devo max” was the specific social change that those voting against Scotland’s independence were endorsing; A view we do not share.

<sup>3</sup>This was certainly the view of the authors, one of whom (Grant) attended political events, collected newspaper articles, and interviewed Scottish voters throughout the two months prior to the vote. For example, at the Festival of Politics that was held at the Scottish parliament building a month before the referendum, speakers engaged in lively debates which focussed on how voting for or against independence would affect revenues from the North Sea oil, the provision of social services, currency, public broadcasting, E. U. membership, and local democracy, all issues raised by Alex Salmond as part of the “Yes Scotland” campaign.

<sup>4</sup>Initially, we tested and found no support for the speculative hypothesis that status insecurity mediated the relationship between cogCRD and the two components of affCRD (see also Grant et al., 2015). Write to Grant for the results of the analysis.

<sup>5</sup>Voters who supported the “Yes Scotland” campaign and those who supported the “Better Together” campaign could have a strong Scottish identity and, on that basis, argue for their position. Theoretically, however, those who voted for independence should be those who believed that Scottish people’s status within the United Kingdom is illegitimately low and hard to change (stable). Hence, their strong Scottish identity drives them to support separatism as the only positive alternative for Scotland’s future. In contrast, those who voted against Scotland’s independence should be less likely to hold these beliefs because they could imagine a positive future for Scotland within the United Kingdom. That is, the two groups have different

(contested) imagined histories for Scotland and, therefore, their strong Scottish identity motivates them to vote in opposite ways (Reicher & Hopkins, 2001).

<sup>6</sup>Our original intention to conduct a prospective study was thwarted because school officials did not want pupils to answer questions on their political views during the referendum campaign.

<sup>7</sup>The other measures were relevant to the students' dissertations and a more general internet study that we and other colleagues were conducting.

<sup>8</sup>The respondents also rated how satisfied they felt in answer to the same questions. A factor analysis showed that the anger and frustration ratings loaded on the same factor, but that the satisfaction ratings loaded on a different factor.

<sup>9</sup>Write to the first author for the EQS diagram file that was used to test the model shown in Figure 1.

<sup>10</sup>Because the referendum vote had already taken place when the questionnaire was administered, we also tested a model that excluded this retrospective variable and which predicted separatist beliefs. This model was a good fit and the estimated path coefficients were very similar in magnitude to those shown in Figure 2; robust CFI = .96, sRMR = .051,  $\chi^2_{S-B}(125, N = 471) = 277.81, p < .001$ .

<sup>11</sup>Write to the first author for the details of this analysis.

Table 1: Means, Standard Deviations and Correlations Among the Variables in the SIRDE Model (N = 450)

Dependent Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Cognitive CRD	1									
2. Negative Emotions	.53***	1								
3. Discrimination	.35***	.48***	1							
4. Scottish Identity	.19***	.35***	.29***	1						
5. Collective Efficacy	-.21***	-.34***	-.30***	-.22***	1					
6. Separatist Beliefs	.28***	.47***	.49***	.39***	-.49***	1				
7. Interest in Politics	.06	.11**	-.02	.01	-.18***	.10	1			
8. The Vote	.29***	.42***	.47***	.33***	-.46***	.84***	.13**	1		
9. Egoistic RD	.14**	.19***	.23***	.07	-.13**	.25***	-.15***	.25***	1	
10. Dissatisfaction with Life	.18***	.31***	.38***	.02	-.31***	.37***	.12**	.36***	.32***	1
Mean	3.24	1.96	2.83	5.66	2.76	3.49	2.89	0.51	2.66	2.37
(SD)	(0.52)	(1.00)	(0.87)	(1.22)	(0.94)	(1.14)	(1.14)	(0.50)	(0.87)	(0.89)

**Note.** Correlations and means for the model which included egoistic RD and life dissatisfaction were based upon responses from 447 respondents.

\*\*  $p < .01$ ; \*\*\*  $p < .001$ , one-tailed.

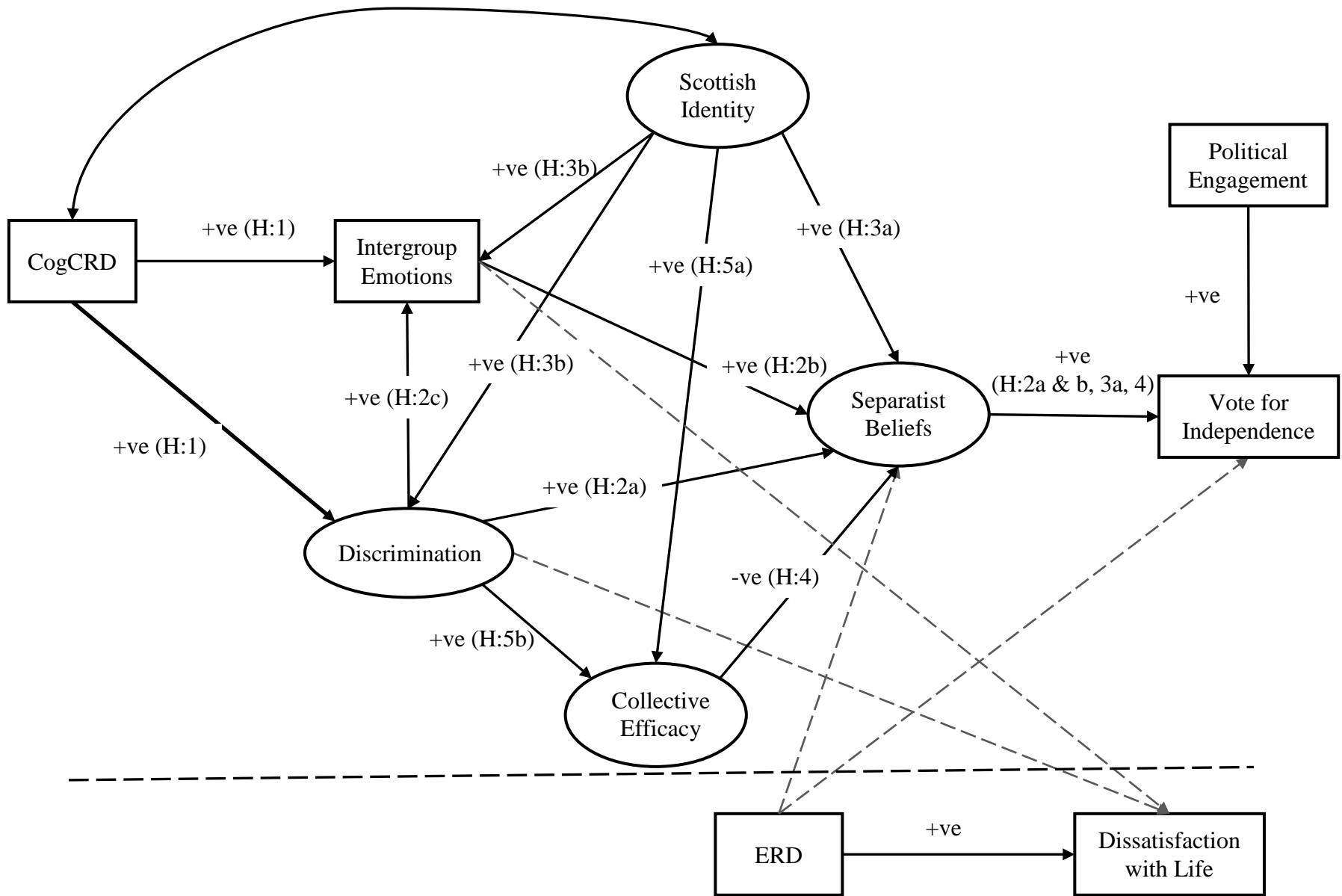


Figure 1. The hypothesized relationships among the variables specified by the Social Identity, Relative Deprivation, collective Efficacy (SIRDE) model (above the horizontal dashed line) and the expanded model designed to test the independence of the effects of collective RD and egoistic RD (the dashed grey arrows show relationships that, theoretically, should not exist).



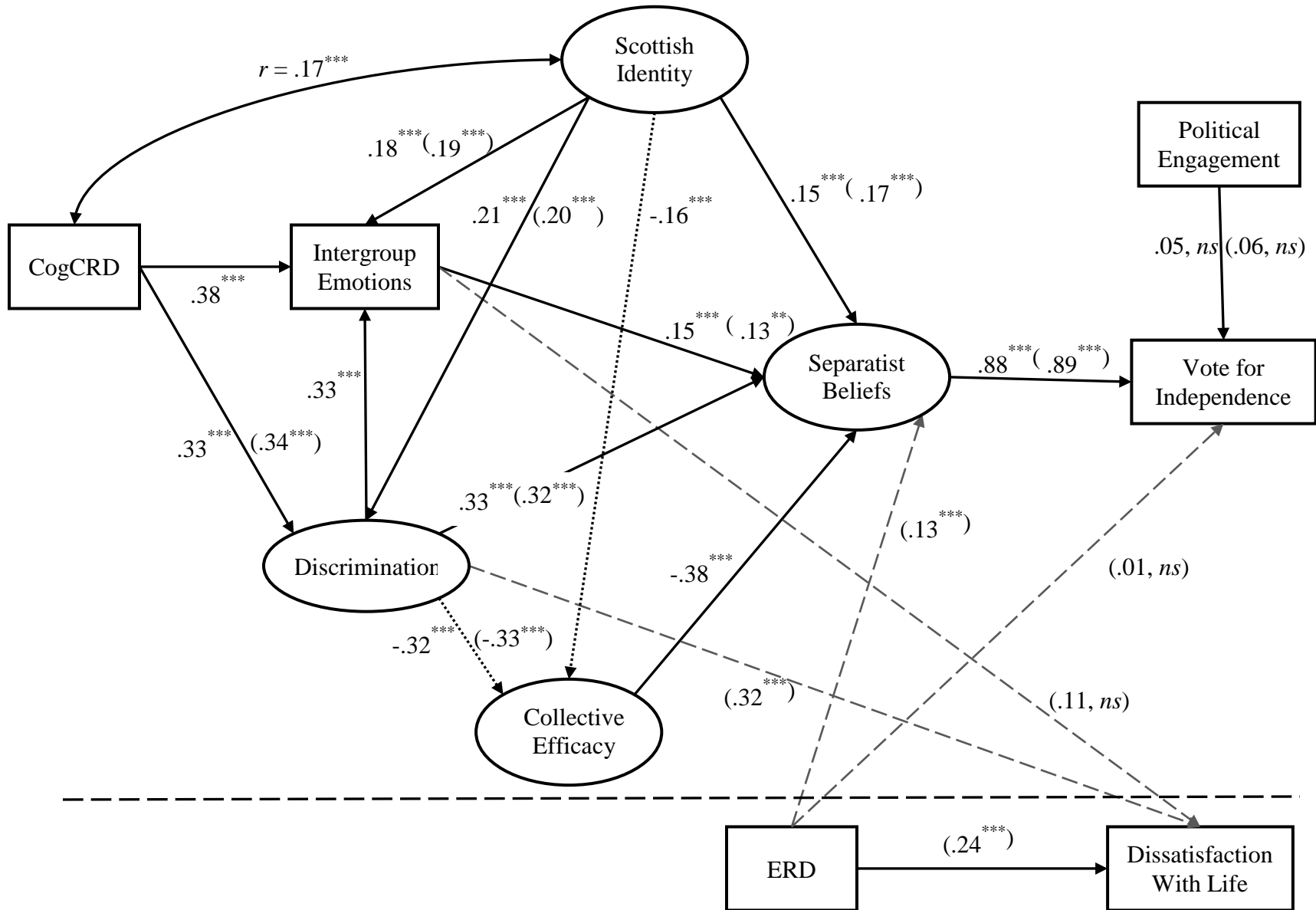


Figure 2. The results of the SEM analyses showing the strengths of the hypothesized causal paths and correlation between the two exogenous variables specified by the Social Identity, Relative Deprivation, collective Efficacy (SIRDE) model. The first number gives the parameter estimates of the SIRDE model (the model above the dashed horizontal line), while the second number in parentheses gives the parameter estimates (if different) when egoistic relative deprivation and life satisfaction are added into the model in order to test the independent effects of CRD and ERD. The dashed grey arrows indicate relationships that, if the effects of CRD and ERD are independent and different, should not be significantly different from zero. The two dotted arrows show results that are counter to the hypotheses.

\*\*  $p < .01$ ; \*\*\*  $p < .001$ .

