Immigration and Redistribution Revisited
How Different Motivations Can Offset Each Other

Abstract:

Despite compelling theoretical arguments, existing research has so far failed to provide conclusive empirical evidence on the relationship between preferences for redistribution and attitudes towards immigration. We argue that social scientists risk making erroneous inferences if the causal link connecting an independent variable to a given output is not carefully modelled. This is particularly true in the presence of multiple and partly offsetting intervening variables. We argue that there are at least four motivations linking attitudes towards redistribution and preferred levels of immigration. We observe a statistically significant association between attitudes towards redistribution and preferred levels of immigration, but only after the motivations have been explicitly integrated into the empirical analysis. If the motivations are not explicitly modelled, no systematic relationship between attitudes towards redistribution and preferred levels of immigration can be observed.

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Introduction

The relationship between immigration and redistribution is arguably one of the most important subjects of the 21st century. Broadly speaking, there are three major strands of research: First, scholars have analysed the social integration of immigrants in their host societies (cf. Bommes and Geddes 2000; Emmenegger and Careja 2011). Second, research has focused on negative self-selection of immigrants into Western European welfare states (cf. Borjas 1999; Thielemann 2006; Nannestad 2007). Finally, scholars have investigated whether immigration undermines support for redistribution (cf. Alesina and Glaeser 2004; Taylor-Gooby 2005; van Oorschot and Uunk 2007; Crepaz and Damron 2009). It is this third strand of research we are concerned with here.

The literature on why immigration might undermine support for redistribution starts from the observation that when there are significant numbers of minorities among the poor, the majority population can be roused against redistributing resources from the majority population to these minorities (Alesina and Glaeser 2004: 134). This phenomenon is often explained by economic self-interest.[1] Van Oorschot and Uunk (2007: 65) summarize the literature on the relationship between immigration and redistribution as follows: "Hostile attitudes between members of two racial or ethnic groups reflect an underlying clash of personal self-interests. Individuals develop negative attitudes towards individuals with whom they are in direct competition." Sides and Citrin (2007: 478) add, "in interest-based theories of immigration, ethnic competition over scarce resources is the motivational basis of opposition to immigration". Similarly, Crepaz and Damron (2009: 439) argue, "welfare chauvinism is connected to the competition over scarce resources".

Interest-based arguments have important implications for the relationship between attitudes towards redistribution and preferred levels of immigration. If self-interest drives individuals' support for redistribution, we should be able to find a negative relationship between preferences for redistribution and preferred levels of immigration given the generally lower socio-economic status of recent immigrants (Morissens and Sainsbury 2005). However, existing research has so far failed to provide conclusive empirical evidence that documents this negative relationship (cf. Nannestad 2007; van Oorschot and Uunk 2007). How can this null finding be explained?

Taking the research on support for redistribution as a starting point, we find the strong emphasis on economic self-interest somewhat puzzling. Although self-interest plays an important role in this literature, research on support for redistribution normally allows for socio-economic preferences other than self-interest (cf. van Oorschot 2000; Feldman and Steenbergen 2001; Meier Jæger 2006). Preferences are here understood as the choices people make in presence of trade-offs between different collections of things they value. Following Camerer and Fehr (2009: 55, emphasis in the original), we use the term 'social preferences' to refer to "how people rank different allocations of material payoffs to themselves *and* others." In contrast, the term 'self-interested' refers to people who do not care about the outcomes of others.

In their field-defining research, the experimental economists around Fehr identify four main socio-economic preferences, which they refer to as 'self-interest', 'strong reciprocity', 'inequity aversion' and 'unconditional altruism' (Fehr and Gächter 2000; Fehr and Fischbacher 2005; Camerer and Fehr 2006). In political science, the latter two are better known under the labels 'egalitarianism' and 'humanitarianism' (cf. Feldman and Steenbergen

2001).[2] This multitude of socio-economic preferences creates serious problems for empirical research on the relationship between immigration and redistribution. If economic self-interest is not the only motivation moderating the relationship between support for redistribution and preferred levels of immigration, then we risk making erroneous inferences because some of these motivations might offset each other at the aggregate level.

Elster (2007) has warned social scientists of premature conclusions in the presence of multiple links between cause and outcome. If there is more than one variable linking cause and outcome, we might not be able to observe a significant relationship between the two, even though they are in fact systematically related. We discuss and demonstrate this important insight using the case of support for redistribution and attitudes towards immigration. Based on research in experimental economics, we recommend distinguishing between four socio-economic preferences (motivations) when analysing the relationship between support for redistribution and support for immigration. For all four motivations, we formulate hypotheses with regard to the relationship between support for redistribution and support for immigration, and we subsequently test these hypotheses. In addition, we demonstrate that in the aggregate, no relationship between support for redistribution and preferred levels of immigration can be observed. We might thus be tempted to conclude that, unless explicitly modelled, there is no systematic relationship between support for redistribution and support for immigration but, as we demonstrate, such a conclusion would be premature.

The paper is structured as follows. In the next section, we discuss the role of multiple intervening variables linking causes and outcomes. Subsequently, we discuss four motivations that moderate the relationship between support for redistribution and support for immigration

in four different ways. After a presentation of the data and the operationalization, we discuss the empirical results. A final section concludes.

Opening up the black box: Four motivations linking immigration and redistribution

Interest-based theories assume that self-interest moderates the relationship between preferences for redistribution and preferred levels of immigration. For instance, some voters might support immigration in the absence of redistribution, but given high levels of redistribution, these voters prefer to have no immigration. Since newly arrived immigrants are often poor, some low-income voters may suddenly become net contributors rather than net beneficiaries of redistribution. Put differently, immigration intensifies competition for scarce resources. In this context, self-interest has to be understood as an intervening variable. By interacting with preferences for redistribution and preferred levels of immigration, self-interest produces an effect not inherent in any of these variables.

But what if preferences for redistribution and preferred levels of immigration are linked by more than one intervening variable? Elster (2007) argues that causes and outcomes are often linked by several intervening variables. If these intervening variables have opposite effects on the dependent variable, researchers might not be able to observe significant relationships between cause and outcome although they are in fact systematically related. If, however, researchers were able to determine beforehand which intervening variable is linking cause and outcome in a specific case, researchers would be able to explicitly model the systematic link between cause and outcome. In this case, the causal relationship should also be observable in the aggregate. Hence, we risk making erroneous inferences if we do not think carefully about the intervening variables that link an independent variable to a given outcome. The only way

to avoid making this error is to open up the black box and model the relationships at play directly.

The literature on immigration and redistribution allows us to demonstrate this important insight. This research field has experienced a veritable boom since the publication of Alesina and Glaeser's (2004) analysis on how to fight poverty. At the end of their chapter on immigration and redistribution, they argue that recent immigration waves to Western Europe might undermine support for the generous Western European welfare states. Only the future will tell whether the Western European welfare states can survive in the face of increasing immigration. However, the US experience is certainly cause for worry as research has shown how ethno-linguistic diversity hampered the development of a generous welfare state (cf. Gilens 1999).

Despite recent efforts there is little consensus on the relationship between immigration and redistribution (cf. Nannestad 2007; van Oorschot and Uunk 2007). On the one hand, several authors have stressed the incompatibility of national welfare states and the free movement of people, most famously Freeman (1986). According to Razin et al. (2002), Hansen (2003), Nannestad (2007) and Finseraas (2008), there is a tension between immigration and redistribution. On the other hand, scholars have argued that more comprehensive welfare states make natives more tolerant of immigrants (van Oorschot and Uunk 2007; Crepaz and Damron 2009) and that left politics counteracts the effect of diversity on support for redistribution because "the left appears able to insulate welfare systems against the impact of greater diversity among citizens" (Taylor-Gooby 2005: 671).

Most of these accounts have in common that they stress economic self-interest as the main motivation linking redistribution preferences to immigration policy preferences. Although we acknowledge the important role of self-interest in the relationship between immigration and redistribution, we believe that due to the dominant focus on self-interest, authors have somewhat lost sight of the fact that there is considerable heterogeneity in the realm of socio-economic preferences. Research on support for redistribution has shown that there are important socio-economic preferences besides self-interest. Social preferences like egalitarianism or reciprocity also matter. However, if these social preferences (rather than self-interest) cause voters to support redistribution, then we can no longer expect that self-interest is the only motivation moderating the relationship between attitudes towards redistribution preferences and immigration. Rather, we have to ask ourselves how egalitarianism and reciprocity moderate this relationship. In addition, if these social preferences moderate the relationship between attitudes towards redistribution and immigration in a different way than self-interest, then we risk that these different moderating effects offset each other at the population level and we risk making erroneous inferences.

We argue that this is exactly the case in the relationship between support for redistribution and support for immigration. Based on experimental economics, we argue that there are four moderator variables (motivations) that must be considered when analysing this relationship, namely self-interest, inequity aversion (egalitarianism), unconditional altruism (humanitarianism) and strong reciprocity. In the empirical analysis, we demonstrate that these four motivations are at play at the same time. However, if they are not explicitly modelled, no statistically significant association between support for redistribution and support for immigration can be observed.

We focus on these four socio-economic preferences because of their prominent role in experimental economics. Economists and psychologists have repeatedly demonstrated that there is considerable heterogeneity in the realm of socio-economic preferences (Kahnemann et al. 1986; Rabin 1993; Fehr and Schmidt 1999; Fehr and Gächter 2000; Fehr and Fischbacher 2003, 2005; Camerer and Fehr 2006). As Fehr and Fischbacher (2005: 151) write, "during the previous decades, experimental psychologists and economists have gathered overwhelming evidence that systematically refutes the self-interest hypothesis and suggests that a substantial fraction of the people demonstrate social motives in their preferences". They refer to these other-regarding preferences as social preferences because "individuals who exhibit them behave as if they value the payoff of relevant reference agents positively or negatively" (Fehr and Fischbacher 2005: 151). The most important social preferences are strong reciprocity, inequity aversion and unconditional altruism. The latter two are better known in political science under the labels 'egalitarianism' and 'humanitarianism' (cf. Feldman and Steenbergen 2001). These social preferences stand in stark contrast to self-interested preferences, which are characterized by a general disregard for the outcomes of others.

In the following, we discuss how these four motivations moderate the relationship between support for redistribution and support for immigration. For reasons of space, this discussion is quite brief. More detailed discussions can be found elsewhere (Feldman and Steenbergen 2001; Fehr and Fischbacher 2005; Emmenegger and Klemmensen 2012). However, before we present the four motivations, a word of caution is in order: As we do not want to make claims about the *direction* of causality, we are not arguing that attitudes towards redistribution cause attitudes towards immigration or vice versa. We simply argue that attitudes towards redistribution and attitudes towards immigration interact in a systematic way.

Let us start with *self-interest*. From a self-interested point of view, there are good reasons to observe a tension between redistribution and immigration. Self-interested individuals are expected to support redistribution if they are likely to be the main beneficiaries (Meier Jæger 2006: 322-323). Immigration, by contrast, hurts their interests because immigration is likely to redirect redistribution from natives to newly-arrived immigrants. The reason is simple: Since newly arrived immigrants are likely to be poorer and more needy than resident natives, some natives may even become net contributors rather than net beneficiaries of redistribution. Thus, if they support redistribution because of self-interest, they cannot be expected to support immigration because immigration is likely to increase competition for scarce resources (Razin et al. 2002; Hansen 2003; Nannestad 2007). This leads us to our first hypothesis:

H1: The positive (negative) effect of support for redistribution on opposition to liberal immigration policies increases (decreases) with the level of self-interest of the respondents.

Egalitarianism (inequity aversion) links attitudes towards redistribution and immigration in a completely different way (Fehr and Schmidt 1999; Feldman and Steenbergen 2001). Egalitarians want to achieve a more equitable distribution of economic resources through government intervention and redistribution. In more practical terms, this means that egalitarians want to increase (decrease) other persons' economic payoff if the other persons' economic payoffs are below (above) an equitable benchmark, for instance through the redistribution of incomes (Fehr and Fischbacher 2005: 153). Although egalitarianism does not necessarily extend to immigrants (cf. Miller 1995), we follow Myrdal (1960) in conceptualizing (and operationalizing) egalitarianism as a behavioural propensity that

9

considers the living conditions of immigrants. It could certainly be argued that some

egalitarians might oppose immigration because the immigration of low-skilled workers might

lower low-skilled wages due to a higher supply of low-skilled labour. However, in the context

of this analysis, a conceptualization of egalitarianism that extends to immigrants is more

relevant.[3] Hence, given that immigrants tend to be needy, egalitarians, as conceptualized and

operationalized here, are unlikely to observe a tension between redistribution and

immigration. Rather, they can be expected to support redistribution to the benefit of

immigrants. This leads us to our second hypothesis:

H2: The positive (negative) effect of support for redistribution on opposition to liberal

immigration policies decreases (increases) with the level of egalitarianism of the respondents.

Strong reciprocity is another motivation that might moderate the relationship between

attitudes towards redistribution and immigration (Fehr and Fischbacher 2005; Fong et al.

2005). A strongly reciprocal individual responds to actions as a function of perceived

intentions motivating this action and the legitimacy of someone's claims. If an action or a

claim is considered 'fair' or 'legitimate', strongly reciprocal individuals respond with

cooperation, otherwise they punish even at personal cost. The prevalence of strong reciprocity

has been demonstrated in experiments using anonymous one-shot interactions. In so-called

ultimatum games, a proposer is instructed to offer a share of a sum known to both players.

The recipient can either accept or reject the proposal. If the recipient accepts, the participants

receive the money as allocated by the proposer. If the recipient rejects, the participants receive

nothing. If self-interest motivates both proposer and recipient, the proposer would offer only a

very small share to the recipient. The recipient, on the other hand, would accept any offer

larger than zero because any such offer would make the recipient better off financially. In

reality, however, proposers tend to offer more money than the bare minimum, while recipients tend to reject low offers even though these offers are considerably higher than the possible minimum offer. The reason for this behaviour is, according to Fehr and Fischbacher (2005), that recipients consider low offers to be unfair and are willing to accept costs (the foregone benefit) if this allows them to punish the proposer.

Evaluating fairness and legitimacy is easiest in small and local groups where members know each other and monitoring costs are close to zero. Public policy, be it migration or social policy, is at the other end of that scale. Public policies are national, anonymous and monitoring costs are very high. As a result, individuals have to rely on 'the recent history' (Bowles and Gintis 2005: 390-391) or 'mental maps' (Rothstein 1998: 137) to evaluate intentions. Instead of relying on factual knowledge about the others' intentions, individuals use popular ideas to evaluate the fairness of actions. Facing strongly reciprocal individuals, immigrants are in a difficult situation because the public perception of the motives for immigration is very negative. Emmenegger and Careja (2011: 140) document that many Europeans think that minority groups abuse the welfare state, that the welfare state is the cause of immigration and that most refugees are 'bogus'. Consequently, strongly reciprocal individuals who question immigrants' intentions are likely to oppose immigration (in order to punish bogus immigrants for their inappropriate intentions). Moreover, strongly reciprocal individuals are expected to support policies that restrict redistribution to the deserving needy. Thus, if strongly reciprocal individuals support redistribution, they can be expected to oppose immigration. This leads us to our third hypothesis:

H3: The positive (negative) effect of support for redistribution on opposition to liberal immigration policies increases (decreases) the more strongly reciprocal respondents are.

However, not everybody scrutinizes immigrants' intentions. *Humanitarians* (unconditional altruism) might think of overloaded boats trying to land the Mediterranean shores of Spain or Italy, or of hunger and misery in food-strapped Third World countries. Instead of thinking in terms of deservingness, humanitarians feel obliged to help those in need, wherever they come from. Put differently, humanitarians want to help the worse off, even if they lie about the true reasons for migrating. If others are in need, humanitarians will want to help. Humanitarians do not condition their behaviour on the actions of others (Fehr and Fischbacher 2005: 154).

Humanitarianism is qualitatively different from egalitarianism. As Feldman and Steenbergen (2001) note, humanitarians want to help those in need, but they do not necessarily support extensive state intervention and widespread redistribution. Humanitarianism is likely to influence attitudes towards immigration (because they consider immigrants to be in need of help), but humanitarianism has no effect on support for redistribution. As argued by Feldman and Steenbergen (2001: 661, emphasis in the original), humanitarianism generates "support for a much more limited set of policies, namely policies that redress immediate *needs* that arise in *limited* sections of the population". As a result, humanitarians do not perceive a tension between redistribution and immigration because they do not see the two as related. This leads us to our fourth hypothesis:

H4: The positive (negative) effect of support for redistribution on opposition to liberal immigration policies is unaffected by the level of humanitarianism of the respondents.

In sum, we argue that at least four interaction effects need to be explicitly modelled when we analyse the relationship between attitudes towards redistribution and immigration. All four

socio-economic preferences can be observed at the same time within a given electorate (Fehr and Fischbacher 2005; Emmenegger and Klemmensen 2012). Individuals who support redistribution out of self-interest are likely to experience a tension between redistribution and immigration. So are strongly reciprocal individuals who question the motives and intentions of the majority of immigrants. In contrast, egalitarians experience no tension between redistribution and immigration, but support both. Finally, humanitarians want to help immigrants, but as their humanitarianism does not affect their attitudes towards redistribution, they do not experience a tension between redistribution and immigration.

Data and operationalization

In this section, we discuss the data sources, the operationalization of variables and the statistical approach. The present analysis uses the first wave of the European Social Survey (2002-03), which contains data on 22 countries. For reasons of data availability, we use data on 20 countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

We operationalize the dependent variable, preferred level of immigration, as suggested by Sides and Citrin (2007: 482-484) in their seminal study on attitudes towards immigration by combining a series of questions about different kinds of immigrant populations. First, respondents were asked: 'To what extent do you think [country] should allow people of the same race or ethnic group as most [country] people to come and live here?' Subsequently, they were asked the same question about immigrants of a different race or ethnic group. Finally, respondents were asked about people from richer countries in Europe, poorer countries in Europe, richer countries outside Europe and poorer countries outside Europe.

Respondents were given the following options: allow many, allow some, allow a few or allow none. All six questions are strongly correlated (Cronbach's alpha = 0.94). We have created the dependent variable by scaling each item to range from 0 to 1 and then averaging these items. The resulting variable ranges from 0 to 1 with a mean of 0.48 and a standard deviation of 0.24. Higher values indicate a preference for *lower* levels of immigration.

Attitudes towards redistribution are operationalized using the following survey item: Please indicate to what extent you agree or disagree with the following statement: 'The government should take measures to reduce differences in income levels.' Respondents were given the following five options: agree strongly, agree, neither agree nor disagree, disagree and disagree strongly. Higher values indicate support for redistribution.

In the theoretical part, we argue that four socio-economic preferences – self-interest, strong reciprocity, humanitarianism and egalitarianism – moderate the relationship between attitudes towards redistribution and attitudes towards immigration. We measure self-interest with the following question: 'Please say how much you agree or disagree with the following statement: Average wages and salaries are generally brought down by people coming to live and work here.' Respondents were given five options, ranging from 1 (disagree strongly) to 5 (agree strongly).

We operationalize self-interest using an attitude question because the survey item allows for a direct comparison with the operationalizations of the three other-regarding socio-economic preferences, which we cannot operationalize using objective indicators given that these preferences consider the outcomes of others. Moreover, we believe that income is an unsuitable indicator of self-interest in the context of this analysis. While high-income earners

are unlikely to compete with newly arrived immigrants over scarce resources, they are likely to be forced to contribute most of the funding. Hence, both high- and low-income earners have reason to experience a tension between redistribution and immigration (Hainsmueller and Hiscox 2010). The former have reason to worry about the increasing extent of redistribution, while the latter need to worry about increased competition for scarce resources.[4]

Our operationalization of self-interest has several advantages: First, it clearly reflects our theoretical argument, which emphasizes competition for scarce resources between residents and newly arrived immigrants. Second, it identifies 'people coming to live and work here' as the source of this increased competition for scarce resources. Third, although the question refers to immigrants, it is primarily concerned with the negative consequences for residents (whose wages and salaries are brought down). Hence, it captures the respondents' self-interest and does not consider the consequences for immigrants. We acknowledge that some respondents might be interested in generally lower salaries (e.g. employers). We control for this possibility by presenting estimation results that restrict the sample to respondents in financial stress. Put differently, we restrict the sample to those who feel economically at risk to evaluate the moderating effect of self-interest.

We measure the three other-regarding socio-economic preferences using the following three survey questions. Egalitarianism is captured using the question: 'Please say how much you agree or disagree with the following statement: People who have to come to live here should be given the same rights as everyone else'. As in the case of self-interest, respondents were given five options, ranging from 1 (disagree strongly) to 5 (agree strongly). This question clearly captures the egalitarians' preference for equitable distribution of economic resources.

Strong reciprocity is captured using the question: 'Please say how much you agree or disagree with the following statement: Most applicants for refugee status aren't in real fear of persecution in their own countries.' Again, respondents were given five options, ranging from 1 (disagree strongly) to 5 (agree strongly). This question clearly refers to the perceived dishonest behaviour of (an important group of) immigrants.[5]

Finally, humanitarianism is captured using the standard operationalization. Respondents were asked how much a given description of some people was or was not like them and were given six options: not like me at all, not like me, a little like me, somewhat like me, like me, very much like me. Higher values indicate that respondents considered themselves to be very much like the described persons. We use the following description to capture humanitarianism: 'It is very important to her/him to help the people around her/him. She/he wants to care for their well-being.'[6]

In the empirical analysis, we are primarily interested in how the four socio-economic preferences *moderate* the relationship between attitudes towards redistribution and preferred levels of immigration. For all these socio-economic preferences we have formulated different theoretical predictions. We expect self-interested and strongly reciprocal individuals to perceive a tension between redistribution and immigration, while we expect egalitarianism to attenuate this tension. Finally, we expect this tension to be unaffected by the level of humanitarianism. The bivariate correlations between the different 'motivations' are generally modest. Self-interest is positively correlated with strong reciprocity (0.22). All other bivariate correlations are below 0.20. [7]

We add a whole set of control variables to our regression models. First, we control for respondents' beliefs about the nation and its cultural make-up. We expect respondents with a strong sense of national identity and a preference for cultural unity to be more opposed to immigration (Sides and Citrin 2007: 480). Second, we control for the comparative estimate of the level of immigration (more or less than other European countries of same size) and the difference between the actual share of foreign-born residents and the respondents' estimate to account for the fact that overestimates of minority populations are correlated with opposition to immigration (Sides and Citrin 2007: 480-481). Third, we control for satisfaction with the economy and personal finances to account for the current economic situation of the respondent and the country. A negative assessment of the current economic situation and personal finances is likely to increase opposition to immigration. Finally, we add the standard control variables (age, education, employment status, gender, income) plus self-identification as member of a minority group. See appendix for documentation of the operationalization of the control variables.[8]

We estimate weighted OLS regressions with clustered standard errors and fixed effects. Following Brambor et al. (2006), we analyse interaction effects using graphical visualizations. The models are estimated using Stata 11.

Empirical analysis

Table 1 displays the results of our regression of preferred levels of immigration (high values indicating a preference for lower levels of immigration) on preferences for redistribution, the moderator variables and control variables. The control variables show the expected signs. In particular, we observe strong effects of variables capturing identity and information. Therefore, we turn our attention to the independent variables of theoretical interest. Model 1

in Table 1 shows that there is no significant unconditional effect of attitudes towards redistribution on preferred levels of immigration. Thus, taken in isolation, Model 1 seems to show that there is no relationship between support for redistribution and preferred levels of immigration. However this conclusion changes once we take into account the moderator variables through which preferences for redistribution and preferred levels of immigration might be linked.

[Table 1]

Models 2 to 6 in Table 1 contain the four moderator variables (self-interest, strong reciprocity, egalitarianism and humanitarianism) with each interaction being tested separately. Finally, Models 7 and 8 in Table 1 contain the four moderator variables with interactions being tested simultaneously. As Table 1 shows, the addition of the four motivations and the four interaction terms leads to a dramatic increase in the explanatory power of our models. Wald tests show that the inclusion of the four moderator variables and the inclusion of the four interaction terms significantly improve the model fit. This finding provides strong evidence that attitudes towards redistribution and immigration interact in a systematic way. We therefore turn to a discussion of the conditional effects of preferences for redistribution on the preferred level of immigration.

Our main interest lies in the relationship between redistribution preferences and attitudes towards immigration and how this relationship is moderated by the four motivations discussed in the theoretical part. As is well known, the constitutive terms of multiplicative interactions (shown in Table 1) should not be interpreted as if they are unconditional or average effects because the constitutive terms capture the marginal effects only when the

18

moderator variable is zero (Brambor et al. 2006: 71-73). Hence, these coefficients are substantively not meaningful. We therefore display the marginal effects graphically.

The five panels in Figure 1 (based on Models 2 to 6 in Table 1) and the five panels in Figure 2 (based on Models 7 and 8 in Table 1) show for all four motivations the marginal effect of preferences for redistribution (y-axis) conditional on the moderator variable linking redistribution preferences to preferred levels of immigration (x-axis). Panels A1 and A2 show the marginal effect of preferences for redistribution on preferred levels of immigration conditional on the degree of the respondents' self-interest. Panels B1 and B2 show the same relationship as Panels A1 and A2 but restrict the sample to respondents under financial stress. Panels C1 and C2 show the marginal effect conditional on the social preference 'egalitarianism', Panels D1 and D2 show the marginal effect conditional on the social preference 'strong reciprocity' and finally Panels E1 and E2 show the marginal effect conditional on the social preference 'humanitarianism'.

[Figures 1 and 2]

Panel A1 in Figure 1 and Panel A2 in Figure 2 show that the marginal effect of preferences for redistribution increases with the level of self-interest. Put differently, the more respondents are self-interested (moving to the right on the x-axis), the higher the marginal effect of preferences for redistribution on preferred levels of immigration. However, somewhat surprisingly, the marginal effects are never significantly different from zero. This changes as soon as we restrict the sample to respondents in financial stress.[9] Panels B1 and B2 demonstrate that self-interest can explain whether respondents in financial stress experience a tension between redistribution and immigration. The marginal effects are

significantly different from zero for respondents characterized by low levels of self-interest. Hence, among those economically at risk, opposition to immigration increases with self-interest.[10]

A different moderating effect can be observed in Panel C1 in Figure 1 and Panel C2 in Figure 2. These two panels show that egalitarian respondents do not experience a tension between redistribution and immigration. Quite the contrary, the more egalitarian the respondents are (moving to the right on the x-axis), the lower is the marginal effect of attitudes towards redistribution on preferences for lower levels of immigration. In both panels, the marginal effect turns significantly different from zero.

Panel D1 in Figure 1 and Panel D2 in Figure 2 display the marginal effect of preferences for redistribution on preferred levels of immigration conditional on the social preference 'strong reciprocity'. Panel D1 shows that the more strongly reciprocal respondents are (moving to the right on the x-axis), the stronger they prefer lower levels of immigration. This effect is significantly different from zero for respondents characterized by low levels of strong reciprocity. We thus find evidence of a moderating effect of the social preference strong reciprocity. However, as Panel D2 shows, the significant effect disappears once we include the other three moderator variables.[11] We speculate that this lack of robustness can be explained by multicollinearity. Among the four moderator variables, we observe the strongest bivariate correlation between self-interest and strong reciprocity (r_p=0.22). Indeed, an analysis of variance inflation factors (VIF) shows that models 7 and 8 suffer from multicollinearity. The VIF quantifies the extent to which multicollinearity inflates standard errors. In Models 7 and 8, the average VIF is 5.7, while the VIF for the interaction effect between preferences for redistribution and strong reciprocity approaches 20. In contrast, Models 1 to 6 in Table 1 have

average variance inflation factors between 2.3 (Model 1) and 3.6 (Model 3), indicating low levels of multicollinearity. Thus, Models 7 and 8 in Table 1 are likely to overestimate the size of the standard errors of the variables of interest.

In the case of egalitarianism, self-interest and strong reciprocity, we expect to find significant marginal effects of preferences for redistribution on preferred levels of immigration conditional on the scores of the moderator variable. In contrast, we expect to find no such relationship in the case of humanitarianism. Indeed, as Panels E1 in Figure 1 and E2 in Figure 2 demonstrate, humanitarianism does not moderate the relationship between preferences for redistribution and attitudes towards immigration. If at all, it seems as if the perception of a tension between redistribution and immigration increases with the level of humanitarianism of the respondent (see Panel E2). This demonstrates that humanitarianism is qualitatively different from both egalitarianism and self-interest.

In sum, only when we model the four motivations explicitly do we observe a significant relationship between attitudes towards redistribution and preferred levels of immigration. More concretely, we find significant effects of redistribution preferences on attitudes towards immigration conditional on the level of egalitarianism, self-interest and reciprocity. However, if we fail to open the black box, we cannot observe a significant relationship (see Model 1) and might be tempted to conclude that preferences for redistribution and attitudes towards immigration are not systematically related. However, such a conclusion would be premature. Rather, the absence of a significant relationship in Model 1 is the result of the fact that the effects of the intervening variables 'self-interest' and 'strong reciprocity' are offset by the effects of the intervening variable 'egalitarianism'. If these effects are disentangled, the significant relationship becomes visible.

Conclusions

We have argued that we risk making erroneous inferences if we do not think carefully about the intervening variables that link an independent variable to a given outcome. Using the relationship between attitudes towards redistribution and preferred levels of immigration as our example, we show that if these intervening variables are not carefully modelled we risk accepting wrong hypotheses or discarding hypotheses that are probably true. We therefore argue that we need to be more attentive to the ways in which dependent and independent variables are linked. This insight is especially important in cases in which more than one intervening variable moderates the relationship between independent and dependent variables. If these effects offset each other, we might be tempted to conclude that independent and dependent variables are not systematically related. However, the explicit modelling of the set of intervening variables could unearth the causal relationship.

Our empirical case, the relationship between redistribution and immigration, implies that scholars have underestimated the importance of the link between preferences for redistribution and attitudes towards immigration. This literature typically assumes that self-interest is the only socio-economic preference that links attitudes towards redistribution to preferred levels of immigration. However, it is well established in the literature on welfare state support as well as experimental economics that other socio-economic preferences such as egalitarianism and strong reciprocity influence support for redistribution. If these multiple intervening variables have partly offsetting effects on the relationship between attitudes towards redistribution and preferred levels of immigration, researchers might be tempted to reject a systematic relationship between these two variables. However, an explicit modelling of these interaction effects would have uncovered the true magnitude of the relationship.

In our statistical analysis, we have first demonstrated the absence of a significant relationship between preferences for redistribution and preferred levels of immigration – despite compelling theoretical reasons to think otherwise. However, once we have incorporated the intervening variables expected to moderate the relationship between preferences for redistribution and preferred levels of immigration, we were able to find significant and substantively important effects. Hence, we have found that among those who feel economically at risk self-interested respondents indeed experience a tension between immigration and redistribution. However, this relationship becomes visible only once we disentangle the effect of self-interest from the effects of egalitarianism, humanitarianism and strong reciprocity.

We were able to observe these significant effects of preferences for redistribution on preferred levels of immigration despite admittedly somewhat rudimentary measures of the four moderator variables. We are confident that more sophisticated operationalizations would unearth even stronger effects. In particular, laboratory experiments could prove to be useful in assessing the level of egalitarianism, humanitarianism, self-interest and strong reciprocity, before the participants' preferences for redistribution and preferred levels of immigration are surveyed.

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Endnotes:

[1] Existing research does not only focus on interest-based theories. Scholars also emphasize the role of identities and information. Although we acknowledge the role of identities and information, this article focuses on the role of socio-economic motivations. However, we control in the empirical analysis for the role of identities and information through a battery of control variables.

[2] We are using the terms inequity aversion and egalitarianism and the terms unconditional altruism and humanitarianism interchangeably.

[3] We refrain from considering both conceptualizations of egalitarianism in the statistical analysis because both conceptualizations would necessarily rely on similar operationalizations. In addition, the inclusion of both conceptualizations would blur the distinction between egalitarianism and self-interest in the context of this analysis because the likelihood of being a beneficiary of egalitarian policies increases with restrictive immigration policies.

[4] We arrive at similar conclusions using alternative operationalizations such as unemployment, the importance of supporting those worse off or the perceived consequences of immigration for the economic prospects of the poor. Results are available upon request. We prefer our indicator of self-interest to these alternative operationalizations for a series of reasons: Unemployment is a dummy variable, the importance of supporting those worse off comes dangerously close to the standard operationalization of humanitarianism (importance of helping others), while the perceived economic consequences for the poor is only relevant for self-interested poor respondents.

[5] Unavoidably, our operationalization does not measure whether an individual is strongly reciprocal, but rather whether an individual, if strongly reciprocal, is likely to question immigrants' intentions. To our knowledge, the level of strong reciprocity can be assessed only

by means of experiments. Hence, our operationalization should be understood as rather conservative.

[6] This measure is from Schwartz's human values scale. Although developed to measure ten basic values, we use individual items that correspond to specific values (56-item instrument). Our measure of humanitarianism, which is part of the basic value 'benevolence', captures among others the specific values 'forgiving' and 'helpful'.

[7] Note that we have different expectations for the moderating effects of the four motivations. While we expect self-interest, strong reciprocity and egalitarianism to moderate the relationship between preferences for redistribution and preferred levels of immigration, humanitarianism is not expected to have a moderating effect.

[8] We thank John Sides and Jack Citrin for their support in the development of the statistical model.

[9] This is not true when all control variables used in Sides and Citrin (2007) are included. This should not come as a surprise though. Using the full set of control variables leads to severe problems of multicollinearity as several independent variables reach variance inflation factors of up to 20, including the independent variables of interest. In particular, some of the control variables used by Sides and Citrin (such as trust or conservatism) strongly correlate with some of our independent variables of interest (e.g. political ideology is likely to influence perceptions of immigrants' intentions). We have therefore decided to present in the paper estimations based on a smaller set of control variables.

[10] The fact that opposition to immigration increases with self-interest in particular among those economically at risk lends support to recent findings by Hainmueller and Hiscox (2010) who have found that opposition to immigration is more strongly related to fears of welfare competition than to fears of increasing taxes.

[11] The moderating effect of strong reciprocity turns significant once we restrict the sample to respondents in financial stress. Results are available upon request.

Figure 1: Graphical Visualization of Interaction Effects
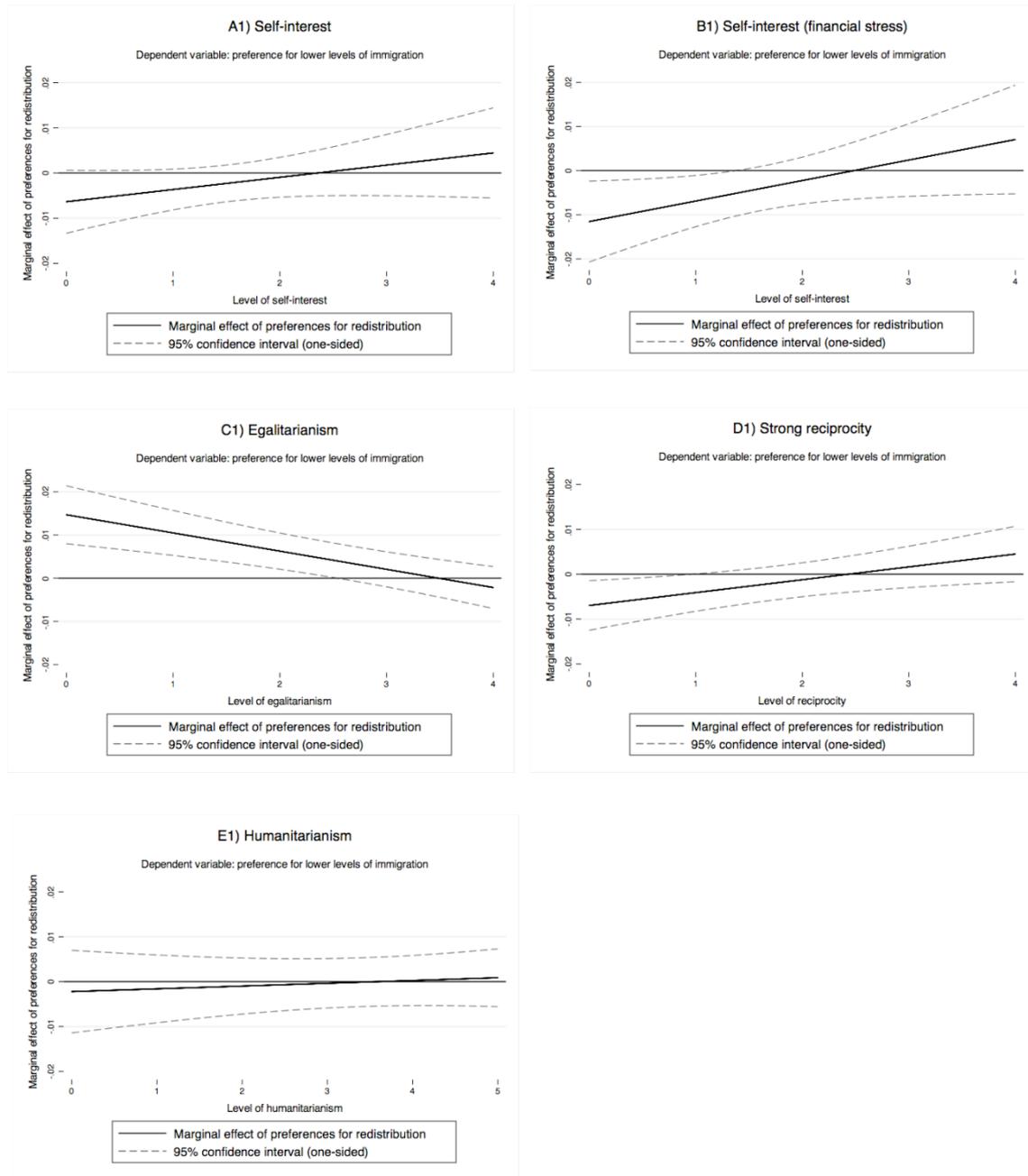
Notes: Graphical visualizations of interaction effects on the basis of Table 1's Models 2 to 6. Dotted lines are 95% confidence intervals (one-sided).

Figure 2: Graphical Visualization of Interaction Effects
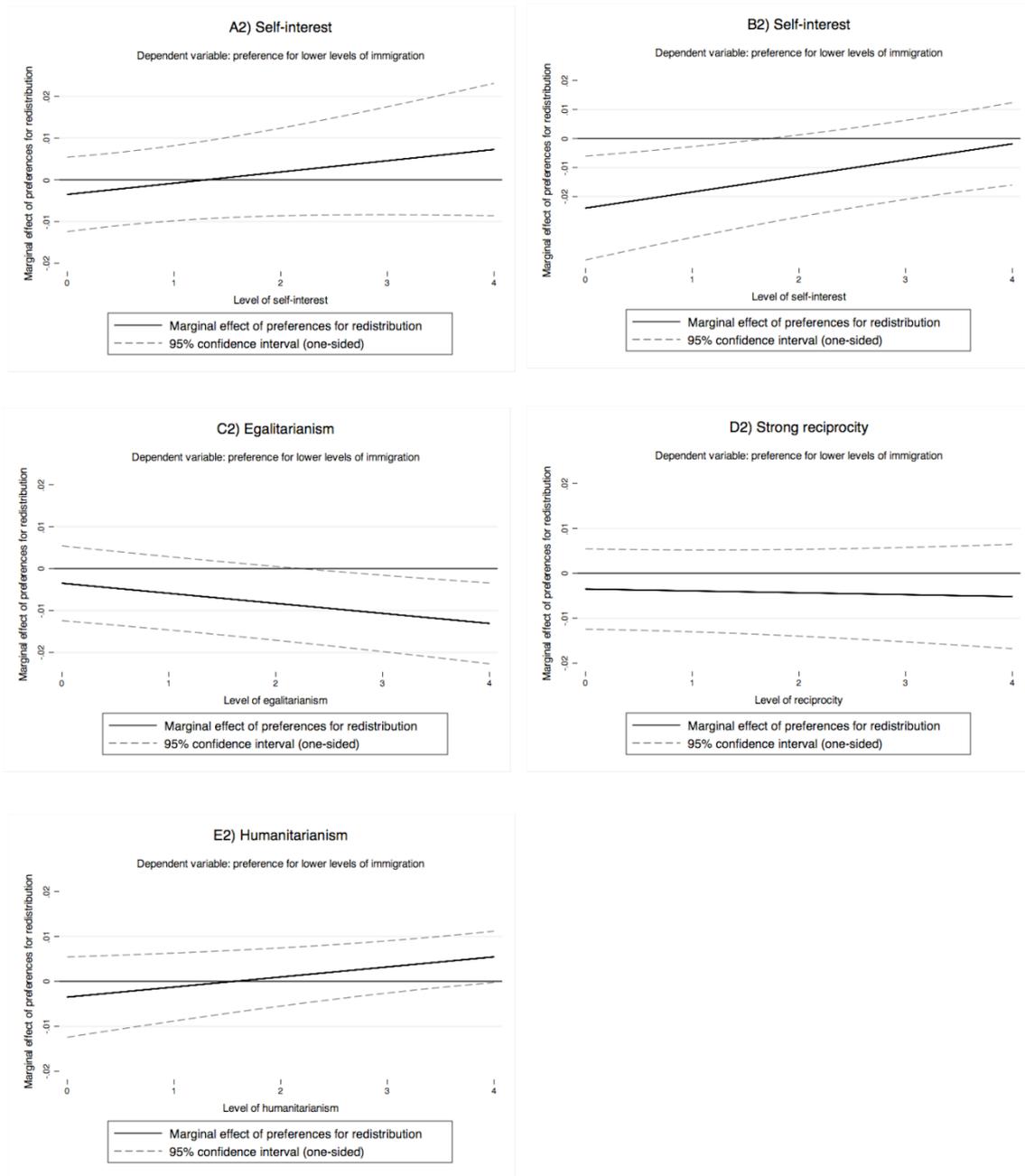
Notes: Graphical visualizations of interaction effects on the basis of Table 1's Models 7 and 8. Dotted lines are 95% confidence intervals (one-sided).

Table 1: Individual-Level Model of Opposition to Immigration

Dependent variable:								Preferred level of immigration						
Model:	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)
Support for redistribution	-0.000		-0.006		-0.012	(*)	0.015	**	-0.007	(*)	-0.002		-0.004		-0.024 *
	(-0.061)		(-1.496)		(-2.066)		(3.590)		(-2.071)		(-0.397)		(-0.644)		(-2.200)
Self-interest	-		0.028	**	0.023	(*)	-		-		-		0.017	(*)	0.010
			(2.911)		(1.787)								(1.965)		(1.151)
Redistribution x self-interest	-		0.003		0.005		-		-		-		0.003		0.006 *
			(1.198)		(1.610)								(1.186)		(2.334)
Egalitarianism	-		-		-		-0.028	***	-		-		-0.026	***	-0.037 ***
							(-5.435)						(-6.521)		(-7.977)
Redistribution x egalitarianism	-		-		-		-0.004	**	-		-		-0.002	*	-0.000
							(-3.375)						(-2.658)		(-0.078)
Strong reciprocity	-		-		-		-		0.023	**	-		0.030	***	0.011
									(3.067)				(4.465)		(1.140)
Redistribution x strong reciprocity	-		-		-		-		0.003	*	-		-0.000		0.003
									(2.097)				(-0.362)		(1.667)
Humanitarianism	-		-		-		-		-		-0.008	(*)	-0.012	**	-0.012 (*)
											(-1.966)		(-3.224)		(-1.796)
Redistribution x humanitarianism	-		-		-		-		-		0.001		0.002	(*)	0.002
											(0.467)		(1.938)		(0.871)
Education	-0.098	***	-0.082	***	-0.064	*	-0.095	***	-0.097	***	-0.097	***	-0.084	***	-0.072 **
	(-6.713)		(-4.950)		(-2.776)		(-7.460)		(-7.264)		(-5.606)		(-5.337)		(-2.902)
Age	0.034	*	0.039	**	0.040	*	0.028	*	0.027	*	0.039	*	0.021		0.025
	(2.514)		(3.347)		(2.509)		(2.492)		(2.213)		(2.670)		(1.568)		(1.647)
Female	0.003		0.005		-0.001		0.002		0.007	(*)	0.002		0.006		0.005
	(0.612)		(1.238)		(-0.219)		(0.405)		(2.002)		(0.486)		(1.316)		(1.060)
Income	-0.044	*	-0.043	**	-0.052		-0.047	*	-0.039	*	-0.053	**	-0.045	**	-0.048 (*)
	(-2.571)		(-2.983)		(-1.390)		(-2.711)		(-2.694)		(-3.192)		(-3.937)		(-1.759)
Employment: unemployed	0.001		-0.005		0.006		0.001		0.001		-0.008		-0.012		-0.002
	(0.085)		(-0.476)		(0.640)		(0.101)		(0.056)		(-0.602)		(-1.052)		(-0.194)

	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
Employment: student	-0.049	***	-0.050	***	-0.044	***	-0.041	***	-0.043	***	-0.048	***	-0.036	***	-0.029	***
	(-10.122)		(-8.062)		(-5.456)		(-8.099)		(-7.843)		(-8.639)		(-5.926)		(-6.015)	
Employment: retired etc.	-0.006		-0.009	(*)	0.002		-0.006		-0.008		-0.003		-0.005		0.003	
	(-1.525)		(-1.987)		(0.290)		(-1.542)		(-1.582)		(-0.769)		(-1.178)		(0.430)	
Satisfaction with personal finances	-0.042	*	-0.035	*	-0.066		-0.038	*	-0.046	**	-0.032	*	-0.025	*	-0.049	
	(-2.756)		(-2.765)		(-1.478)		(-2.504)		(-2.956)		(-2.335)		(-2.552)		(-1.148)	
Satisfaction with economy	-0.009	***	-0.007	***	-0.007	***	-0.008	***	-0.009	***	-0.010	***	-0.008	***	-0.009	***
	(-4.835)		(-3.980)		(-3.918)		(-4.694)		(-4.474)		(-7.937)		(-7.830)		(-5.797)	
Preference for cultural unity	0.205	***	0.175	***	0.141	***	0.181	***	0.184	***	0.196	***	0.141	***	0.114	***
	(19.898)		(17.722)		(10.496)		(18.498)		(21.572)		(17.568)		(13.985)		(7.076)	
Preference for national authority	0.008	***	0.008	***	0.006	*	0.007	***	0.008	***	0.008	***	0.007	***	0.006	*
	(6.607)		(7.011)		(2.230)		(5.843)		(7.214)		(5.754)		(5.808)		(2.428)	
Comparative estimate (immigration)	0.038	***	0.032	***	0.033	***	0.033	***	0.034	***	0.035	***	0.022	***	0.023	***
	(8.256)		(8.299)		(7.123)		(7.764)		(7.683)		(7.016)		(7.263)		(5.196)	
Absolute misperception (immigration)	0.117	***	0.103	***	0.095	***	0.110	***	0.107	***	0.102	***	0.075	***	0.064	***
	(6.080)		(6.798)		(5.170)		(7.760)		(5.840)		(7.495)		(9.731)		(5.336)	
Have immigrant friends	-0.094	***	-0.085	***	-0.102	***	-0.082	***	-0.090	***	-0.093	***	-0.074	***	-0.094	***
	(-14.300)		(-14.748)		(-11.591)		(-12.075)		(-12.898)		(-12.248)		(-10.742)		(-10.788)	
Self-identified minority	-0.020	*	-0.023	**	-0.034	**	-0.012	(*)	-0.025	***	-0.015		-0.016	*	-0.016	
	(-2.807)		(-3.309)		(-2.917)		(-1.769)		(-4.680)		(-1.394)		(-2.294)		(-1.363)	
Constant	0.347	***	0.319	***	0.361	***	0.425	***	0.327	***	0.397	***	0.430	***	0.546	***
	(15.357)		(11.130)		(10.625)		(18.930)		(15.815)		(15.697)		(18.526)		(10.865)	
Country fixed effects	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Wald test (F-test statistic)	-		107.44		101.77		157.16		22.77		9.21		910.74		630.82	
Adj. R^2	0.281		0.310		0.293		0.314		0.304		0.282		0.352		0.346	
N	29'840		28'973		10'145		29'608		27'012		26'844		23'717		8'278	

Notes: Weighted OLS regressions with country fixed effects and robust standard errors (clustered sandwich estimator). Country dummies are not reported due to space restrictions. t-values in parentheses. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, (*) $p < 0.10$. Data source: 2002-03 European Social Survey.

Appendix:

Table A1: Operationalization of control variables

Variable	Operationalization
Satisfaction with personal finances	'Which of these descriptions on this card comes closest to how you feel about your household's income nowadays' and 'If for some reason you were in serious financial difficulties and had to borrow money to make ends meet, how difficult or easy would that be?'
Satisfaction with economy	'On the whole how satisfied are you with the present state of the economy?'
Income	'Using this card, if you add up the income from all sources, which letter describes your household's total net income?'
Employment status	'Using this card, which of these descriptions applies to what you have been doing for the last 7 days?' We distinguish between employed respondents (reference category), unemployed respondents, students and a residual category.
Preference for cultural unity	'Using this card, please tell me how much you agree or disagree with each of these statements: It is better for a country if almost everyone shares the same customs and traditions.'
Preference for national authority	'Policies can be decided at different levels. Using this card, at which level do you think the following policies should mainly be decided: protecting the environment; fighting organized crime; agriculture; defence; social welfare; aid to developing countries; immigration and refugees; and interest rates.'
Comparative estimate (immigration)	'Compared to other European countries of about the size as [country], do you think that more or fewer people come and live here from other countries?'
Absolute misperception (immigration)	'Out of every 1000 people living in [country], how many do you think were born outside [country]?' (minus the actual number)
Have immigrant friends	'Do you have any friends who have come to live in [country] from another country?'
Self-identified minority	'Do you belong to a minority ethnic group in [country]?'
Education	'What is the highest level of education you have achieved?'
Age	'And in what year were you born?'
Female	Sex of respondent (coded by interviewer)