Ca' Foscari University of Venice

Matija Kovacic
and
Cristina Elisa Orso

Why do some countries fear immigration more than others? Evidence from Europe

Why do some countries fear immigration more than others? Evidence from Europe

Matija Kovacic
and
Cristina Elisa Orso
Ca' Foscari University of Venice

Abstract
In this paper we show that the individuals' perception of immigration is shake by their cultural and social characteristics. In order to account for cultural differences in a broader sense, we rely on linguistic relativity theory according to which linguistic differences in grammatical structure may induce speakers of different languages to conceptualize and experience the world differently (Sapir (1921), Whorf and Carroll (1964)). Linguistic variation is measured by means of a specific linguistic marker developed in Kovacic et al. (2015) based on the number of grammatical categories (moods)concerned with the expression of uncertainty. We show that more intensive users of these specific grammatical forms are signficantly more intolerant toward immigration with respect to other identical individuals speaking a different language/s. In line with Kovacic et al. (2015), this result can be interpreted as a direct consequence of individual unobserved general attitude towards uncertainty reflected by the specific linguistic marker used to measure the degree of linguistic variation. The results are robust to the inclusion of additional set of explanatory and control variables, country and year fixed effects, and alternative estimation methods.

Address for correspondence:
Cristina Orso
Department of Economics
Ca' Foscari University of Venice
Cannaregio 873, Fondamenta S.Giobbe
30121 Venezia - Italy
Phone: (++39) 041 2349105
Fax: (++39) 041 2349176
e-mail: cristina.orso@unive.it

Why do some individuals fear immigration more than others? Evidence from Europe

By Matija Kovacic[*1] and Cristina Elisa Orso[†2]

[1,2]*Department of Economics, Ca' Foscari University of Venice*

This Version: February 21, 2018

Abstract

In this paper we show that individual preferences for immigration are also shaped by specific non-economic factors. In order to account for non-economic differences in a broader sense, we rely on linguistic relativity hypothesis according to which differences in grammatical structures may induce speakers of distinct languages to conceptualize and experience the world differently (Sapir, 1921; Whorf and Carroll, 1964). Linguistic variation is measured by means of a specific linguistic marker based on the number of grammatical categories (moods) concerned with the expression of uncertainty. We show that more intensive users of these specific grammatical forms are significantly more intolerant toward immigration with respect to other identical individuals speaking a different language/s. This can be attributed to unobserved general attitudes towards risk and uncertainty, since the linguistic marker strongly correlates with the individuals' level of risk aversion (Kovacic et al., 2015). The results are robust to the inclusion of additional set of explanatory and control variables,country and year fixed effects, and alternative samplings.

Keywords: Preferences for Immigration, Risk Aversion, Language.

JEL Classification: D80, Z13, J15, D83.

---

[*]E-Mail: matija.kovacic@unive.it, Phone: +39.041.234.9183

[†]**Corresponding Author**: E-Mail: cristina.orso@unive.it., Phone: +39.041.234.9105

1 Introduction

The debate over immigration is now a prominent issue in many European countries. On the beginning of 2016, the number of people living in the EU-28 who were citizens of non-member countries was 20.7 million while the number of people living in the EU-28 who had been born outside of the EU was 35.1 million.[1] The involvement of immigrants in urban unrest and the growing body of evidence on their poor integration outcomes in employment, education and health have contributed to increase the interest of policy makers.

One of the barriers to social integration is the negative attitude of the receiving populations toward immigrants. Some countries are persistently more reluctant to immigration while others remain more tolerant. According to Eurobarometer (2016)[2], in 2016, 58% of respondents in western and eastern European countries expressed a negative opinion about immigration from outside the EU. Conversely, only 35% of European respondents have a negative opinion about immigration of people from other EU Member States. Across the EU-28, a negative attitude toward immigrants from outside Europe was widely shared by respondents, especially in Latvia (86%), Slovakia (84%), and Hungary (83%). Sweden stands out as the most tolerant country with 62% of respondents very tolerant toward immigration. While opposition to immigration and immigrant integration persist to a different extent in several European countries, the causal evidence to explain such patterns in the public opinion is quite weak.

The empirical and theoretical literature has recently attempted to investigate what drives individual perceptions over immigration focusing on economic and non-economic factors[3]. While there is a broad consensus on the importance of income endowments and occupational status, skill levels, and educational attainments, the way in which the non-economic factors are conceptualized and measured still remains a matter of debate.

---

[1]See for instance: `http://ec.europa.eu/eurostat/statistics-explained/index.php/Migration_and_migrant_population_statistics`

[2]Eurobarometer in collaboration with European Social Survey (ESS) provide comparative data on opinions and social attitudes across EU Member States. The surveys assessed the attitudes of the majority population towards minorities according to the extent to which they agreed or disagreed with certain statements related to immigration. See `http://ec.europa.eu/public_opinion/archives/eb/eb85/eb85_anx_en.pdf`.

[3]See Hainmueller and Hopkins (2014) for a complete review of the literature.

In this paper we propose an innovative approach to address the role of specific non-economic factors in explaining individual preferences over immigration in receiving countries. The element of novelty lies in introducing linguistic variation as a potential channel to explain the determinants of attitudes toward immigration, across and within countries. The approach adopted in this paper is based on Sapir (1921) and Whorf and Carroll (1964) hypothesis, according to which linguistic differences in grammatical structures may induce speakers of different languages to conceptualize and experience the world in a different way. If individuals tend to think and behave differently depending on the characteristics of the language they use, some dimensions of linguistic structures (grammatical categories) may also shape the individual's perception of immigration. The idea is that linguistic variation does not influence directly the individual attitudes toward immigration, but it does so through its impact on other individual-specific traits possibly related to the immigration phenomenon, such as their general preferences over risk and uncertainty.

In order to account for linguistic variation and its magnitude within and across countries and regions in this specific context, we make use of the linguistic marker developed in Kovacic et al. (2015) based on the number of contexts concerned with the expression of possible or hypothetical situations in which specific non-indicative moods (*i.e.* subjunctive, conditional, etc.) are used. Since indicative generally asserts that something is true, then according to linguistic relativity hypothesis, the perceived degree of uncertainty should be larger with a non-indicative mood compared to an indicative one. Therefore, speakers of languages where non-indicative moods are used more often to describe hypothetical situations, should experience the world as being more mutable and uncertain compared to speakers of languages where these forms are less frequent, *ceteris paribus*. The linguistic marker developed in Kovacic et al. (2015) seems suitable for our analysis for two main reasons. First, it strongly correlates with the individual level of risk aversion.[4] Second, language is exogenous and represent a very slowly changing individual trait. It is not a matter of choice, rather it is

---

[4]Another useful reference for the empirical assessment of relationship between language and economic behavior is Chen (2013) based on different linguistic categorization (futurity) in a different economic context (savings and healthy behavior).

given and it is not influenced by immigration itself.

Using individual data from 31 European countries (and Israel) speaking 29 different languages, we estimate the determinants of economic and non-economic concerns related to immigration, and find that, *ceteris paribus*, specific non-economic factors approximated by linguistic markers play an important role in the determination of individual degree of tolerance toward immigration. In particular, individuals speaking languages where non-indicative moods are used more intensively, thus reflecting a higher risk aversion, are on average more concerned about economic and cultural aspects of immigration phenomenon, compared to similar individuals speaking languages where these forms are used less frequently. Moreover, these individuals also have a more pronounced negative opinion about immigration policy related to the the number of immigrants of the same or different race, or from poor non-EU countries (Card et al. (2012)).

This result holds both across countries and within linguistically heterogeneous countries. Since more intensive users of non-indicative moods are on average more uncertain and risk averse (Kovacic et al. (2015)), and preferences toward immigration may in part depend on the individuals' general risk preferences, these individuals may also be more more reluctant to immigration.

The remainder of this paper is organized as follows. The next section briefly summarizes the literature on the determinants of individual attitudes toward immigration and introduces the concept of linguistic relativity. Section 3 presents our linguistic marker and describes the variables and the data used in the empirical analysis. Section 4 explains the estimation strategy and the results, while in Section 5 we present a series of additional robustness checks. Section 6 concludes.

2   On the Determinants of Preferences for Immigration and Linguistic Relativity

An extensive literature has analyzed the potential determinants of individual preferences over immigration, reaching different conclusions on the role played by economic and so-

cial factors (see, for instance, Scheve and Slaughter (2001); Gang et al. (2002); Fertig and Schmidt (2002); Mayda (2006); Facchini and Mayda (2009)). Some work exclusively focus on economic factors (for instance, Scheve and Slaughter (2001)), while others (Mayda (2006); Facchini and Mayda (2008), Facchini and Mayda (2009)) investigate the influence of both economic and non-economic circumstances in modeling preferences over immigration.

By employing two distinct surveys of data (International Social Survey Programme and World Value Survey), Mayda (2006) finds a significant correlation between opinions about immigration and individual skills, *i.e.*, skilled individuals tend to be more pro-immigration in countries where the relative skill composition of natives to immigrants is high, and viceversa. Card et al. (2012) use the 2002 European Social Survey (ESS) to analyze the relative importance of economic and compositional concerns in modeling opinions about immigration. Their findings suggest that compositional amenities (*i.e.*, changes in the cultural and social composition of population in the receiving countries) are more relevant in shaping variation in individual's attitudes toward immigration than concerns over wages and taxes. To estimate the intensity of concerns about compositional effects of immigration, they use a set of questions related to individual's perceptions on immigration policy, customs and traditions, religion, language, and ethnic composition of population. Their contribution provides support to the primacy of the cultural over economic concerns in explaining natives' immigration preferences (Hainmueller and Hopkins (2014)). Using the same data, Sides and Citrin (2007) show that cultural homogeneity is a stronger predictor for immigration attitudes compared to economic indicators of vulnerability at the individual level. In the same vein, other studies emphasize the role of non-economic determinants in shaping immigration preferences. For instance, O'Rourke and Sinnott (2006) analyze whether a set of cultural factors such as strong national identity, patriotic and nationalist attitudes may affect perceptions over immigration using the 1995 International Social Survey Programme (ISSP) module on national identity. Their findings highlight that nationalist sentiment is strongly associated with individual's preferences toward immigrants, having a large positive effect on anti-immigration attitudes. Dustmann and Preston (2007) consider the influence

of racial-driven concerns in determining attitudes toward immigration. Intolerance may be shaped by reasons related to cultural and ethnic difference of the immigrant groups. Racial or cultural prejudices may severally threaten social integration, inducing social tensions and costs. Information on racial and cultural attitudes were drawn by a set of questions on attitudes toward inter-ethnic marriage, have a minority boss, and self admitted prejudice against minorities[5]. They isolate cultural and racial concerns as a relevant channel, strongly correlated with preferences over immigration.

Although this evidence shows that differences in non-economic characteristics may represent an important driver of individual preferences over immigration, the inability to identify a source of exogenous variation for such traits has considerably limited the empirical literature from developing clear evidence on the causal effects (Hainmueller and Hopkins (2014)). In order to address this issue, we propose an innovative approach based on the concept of linguistic relativity ((Sapir, 1921), (Whorf and Carroll, 1964)) according to which differences in the way the individuals are induced to speak may influence to some extent their perception and interpretation of the reality, and consequently, have some impact on their preferences and behavior.

The essential idea underlying the linguistic relativity hypothesis is that differences in grammatical structures and/or vocabulary may influence the way in which we think and, consequently, behave. As suggested by Sapir (1921) and Whorf and Carroll (1964), the semantic structures of different languages can affect the way speakers perceive and interpret the world they observe. On this view, if speakers of different languages tend to think and behave differently depending on the language they use, some dimensions of linguistic structures may also shape their preferences and economic decision-making. The linguistic relativity hypothesis has been interpreted according to two versions. The "strong" one (known as linguistic determinism), states that linguistic categories *control* cognitive processes. This version of the hypothesis, however, has been considered as unrealistic and generally refuted (Pinker, 1994). The "weak" version claims that linguistic categories have *some* effect on cognitive domain, particularly with respect to memory and categorization. The latter version was

---

[5]Attitudinal data is drawn from the British Social Attitudes Survey.

taken to be more feasible and has inspired research on topics such as color perception, shape classification, space and time categorization, and recently economic behavior. For instance, Winawer et al. (2007) show that the level of diversification of the vocabulary related to colors, may influence the ability of individuals to distinguish between different types of the same basic color. In a recent paper on cross-country differences in gender political quota, Santacreu-Vasut et al. (2013) show that pervasiveness of gender distinctions in grammar is an important correlate for individual perception of the general role of men and women in the society, which in turn influences the extent of regulation of gender political quota.

Chen (2013), on the other hand, represents the first attempt to investigate the impact of language differences on several aspects of individual economic behavior. The author adopts a future time criterion from typological linguistics discussed in Dahl (2000) and Thieroff (2000), which separates languages into two broad categories: weak and strong Future Time Reference (FTR henceforth) according to how they require speakers to mark the timing of events. Some languages require an explicit verb conjugation in order to distinguish between present and future event (strong FTR languages), while others allow their speakers to talk about the future by using the same verb forms as for present events (weak FTR languages). By adopting the weak version of the Sapir-Whorf hypothesis, the author hypothesized that this typological divide has an effect on how speakers conceive time. Specifically, speakers of languages that separate the future from the present tense ("strong FTR" languages) are more prone to dissociate the future from the present compared to speakers of languages that do not employ that specific verb morphology when referring to future events ("weak FTR" or "futureless" languages). As a consequence, this may induce people to perceive the future as being more distant and, as a consequence, to undertake fewer future-oriented actions such as saving, smoking, using condoms, accumulating wealth before retirement, and taking initiatives to enhance long-run health. Indeed, the author's empirical exercise confirms a strong association between weak FTR and future oriented behavior: speakers of weak FTR languages save more, accumulate more wealth by retirement, smoke less frequently and are more physically active.

Kovacic et al. (2015) consider another aspect of individual preferences and relate it to a different economic context, namely the perception of risk and the propensity to invest in risky assets. The authors develop a specific linguistic marker based on the intensity of use of specific grammatical categories (moods) in contexts involving uncertainty. In general, when explaining possible or hypothetical situations, speakers of distinct languages may use indicative or non-indicative grammatical moods (such as conditional, subjuctive, etc.). Since indicative moods are usually used to assert that a certain proposition is true (as of the actual world), when applied to hypothetical situations, the use of non-indicative moods, according to the linguistic relativity hypothesis, should reflect a higher degree of uncertainty. If this conjecture is true, then, speakers of languages where non-indicative moods are used more often, should perceive the world as more mutable and uncertain, and, as a consequence, be more likely to be risk averse with respect to similar individuals speaking languages where these forms are used less frequently, *ceteris paribus*. The authors find a strong association between their linguistic marker and the probability of being averse to risk taking.

Individual attitudes toward risk may play an important role also in the context of immigration. Risk averse individuals may oppose immigration because of their concerns about uncertainties associated to the immigration phenomenon, which may be both economic or cultural in nature. As for any other behavioral trait, measuring risk attitudes is not an easy task. However, the features of the linguistic measure and the empirical evidence on its association with risk preferences in Kovacic et al. (2015) may represent an interesting attempt to shed some light on the effects of differences in perception of risk and uncertainty on the individual preferences over immigration.

In the next section we describe the data used in our empirical analysis. We also introduce our linguistic marker and report some summary statistics related to the distribution of the marker across countries and languages.

3   Data and Descriptive Statistics

To accomplish our objectives, we use the European Social Survey (ESS), a biennial cross-country survey covering a large set of European countries (plus Israel) since 2001. The survey measures the attitudes, beliefs and behavioral patterns of diverse populations, with particular attention to changes in social structure, conditions and attitudes across European countries (`http://www.europeansocialsurvey.org/about/index.html`). Our analysis is based on three rounds (2010, 2012, and 2014)[6].

The ESS asks respondents a battery of questions that bear on individual's opinions over immigration. The questions were asked at distinct levels of generality. Our analysis considers two different dimensions of the respondent's opinions about immigration. First, we focus on three general questions related to the overall effects of immigration on the economy, quality of life, and culture:

1. "Would you say it is generally bad or good for (this country's) economy that people come to live here from other countries?"

2. "Is (this country) made a worse or a better place to live by people coming to live here from other countries?"

3. "Would you say that (your country's) cultural life is generally undermined or enriched by people coming to live here for other countries?"

The questions were answered on a 10 point scale. In line with Card et al. (2012), we have recoded responses in five categories: 0-1 very intolerant, 2-4 intolerant, 5 indifferent, 6-8 tolerant, 9-10 very tolerant. In addition, we also consider a dichotomous categorization of the responses classifying as intolerant all those individuals who are not indifferent and more inclined to be intolerant, *i.e.,* all those who responded 0-4. We also include in the analysis a set of questions reflecting individual preferences about immigration policy. Recognizing that

---

[6]We do not consider the first four rounds because the codification of the region variable has changed starting from 2010. Hence, for the sake of comparability, we consider only the most recent rounds. The list of countries in Appendix.

individuals may have different opinions about immigrants from different sending countries, we focus on the survey answers to these specific questions:

1. "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 ?"

2. " "To what extent do you think [country] should allow people of a different race or ethnic group as most [country] people to come and live here?"

3. "To what extent do you think [country] should allow people from the poorer countries outside Europe to come and live here?"

The questions were answered on a 4 point scale (from 1 - "Allow many to come and live here"- to 4 -"Allow none"). In order to make the answers comparable with general, economic and cultural concerns about immigration, we rescaled the variable such that 1 corresponds to "Allow none" and 4 to "Allow many to come and live here". Tables 7 and 8 (in Appendix A) show some descriptive statistics for the entire set of countries and for the subgroup of individuals living in linguistically heterogeneous countries, respectively.

As for linguistic markers, we adopt the classification from Kovacic et al. (2015). The authors develop a specific linguistic marker based on the number of syntactic contexts that trigger non-indicative moods (*i.e.,* irrealis contexts). What grammarians call *indicative* is the mood generally used to assert that a proposition is true as of the actual world. In the following proposition: *"The meeting has finished"*, the indicative mood (Past Tense) asserts that the statement is undoubtedly true. While in propositions asserting actual or real situations the choice of mood is not a relevant issue, the distinction between indicative and non-indicative moods becomes crucial when describing possible or hypothetical situations, such as: *"I think that the meeting has finished"*. In order to describe this situation, the English language uses indicative (Past Tense), while the Italian speakers would say *"Penso che la riunione sia finita"*, by making use of a non-indicative mood (Subjunctive). The main difference between indicative and non-indicative moods lies in the fact that they assign, by "construction", a different degree of uncertainty to possible situations. In other words,

10

when describing possible or hypothetical situations, the displacement of the actual from the alternative state of facts is perceived as larger when a non-indicative mood is used. Following this logic, English speakers assign less uncertainty with respect to Italian speakers to the same hypothetical situation.

There are only six syntactic contexts involving possible or hypothetical situations which may require the use of indicative or non-indicative moods (but not both). These are also contexts that, from a cross-linguistic viewpoint, trigger non-indicative moods more consistently:

1. complements of modal predicates (*i.e.,* to be possible, to be likely, to be necessary): *It's probable that action should be taken to improve the well-being of the captive animals.*;

2. complements of desiderative and volitional predicates (*i.e.,* to want, to wish, to desire): *I wish I hadn't been late for school.*;

3. complements of epistemic (non-factive) predicates (*i.e.,* to think, to believe, to doubt): *I think we should keep a diverse energy portfolio.*;

4. complements of emotive-factive predicates (*i.e.,* to regret, to be happy, to be sad): *I regret that this joke has garnered so much attention.*;

5. complements of declarative predicates (*i.e.,* to say, to tell, to announce): *I said that one day in my career bad results will come.*;

6. the protasis (the if - clause) and the apodosis (the main clause) in a conditional sentences: *If he had studied harder, he would have passed the exam.*.

Each syntactic environment is assigned the value of 1 when a non-indicative mood is used, and 0 when an indicative mood is required. Adding the values, we obtain an indicator (ranging from 0 to 6) of how frequently non-indicative forms are used in a language, so that languages can be ranked according to the parameter of use of non-indicative moods. The extent of use of different non-indicative moods in these syntactic contexts is then used as an indicator, called "Irrealis", of linguistic variation between individuals speaking different

languages. Languages that do not require non-indicative moods in any of the context above (like English, Danish or Hebrew) are called *"moodless"* languages.

The linguistic mapping in Kovacic et al. (2015) consists of 39 mostly European languages (see Table 9 in Appendix). Data on grammatical mood were mainly collected from Rothstein and Thieroff (2010) which is the most complete typological survey on grammatical mood in the languages of Europe. [7] For the purposes of this analysis, we use data for 29 languages[8]. Regarding the number of irrealis contexts where non-indicative moods are used, in our sample there are 5 "moodless" languages, seven languages use non-indicative moods in only two contexts, and five languages use the non-indicative moods in three contexts. Finally, there are 10 languages with four non-indicative moods contexts and only three languages that use non-indicative moods in all of the six contexts. There are no languages with 1 and 5 non - indicative moods. Moreover, there are 11 linguistically heterogeneous countries, eight of which are characterized by two or more languages with different number of non-indicative moods (Table 9 in Appendix).

The linguistic markers are considered both as a limited discrete variable (ranging from 0 to 6)[9] and as a categorical variable: 0 - no Irrealis users (Irr_Cat0), 2 and 3 Irrealis - low and intermediate Irrealis users (Irr_Cat1), and 4 and 6 Irrealis - intensive Irrealis users (Irr_Cat2). In addition, we also consider separately each class of Irrealis and use Irrealis = 0 as a reference category. Figure 1 shows the distribution of Irrealis in our sample for the entire set of countries and for the linguistically heterogeneous countries.

---

[7]Since not all the data were included in Rothstein and Thieroff (2010), the authors worked out a questionnaire compiled by a number of linguists throughout Europe. They were asked to provide a translation of various sentences into their native language and to produce, for each sentence, explanations on which mood they were using in their versions (*Indicative* versus *Other non-indicative moods* to be described).

[8]The list of languages in Appendix

[9]None of the languages considered in Table 9 is characterized by IRR=1 and IRR=5. However, from a linguistic (grammatical) point of view, these values are admissible.
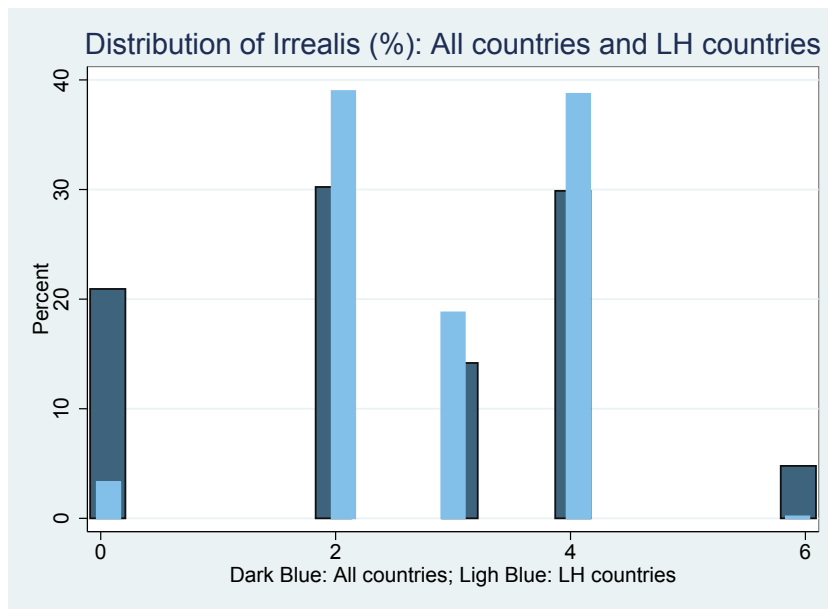
Figure 1: Distribution of Irrealis. Number of Observations: 112184 (all countries); 37895 (LH countries). Source: ESS (rounds 5, 6, 7).

To control for the individual backgrounds, we include a host of demographic and socio-economic information. Among the demographic variables, we consider age, gender, marital status, and household size. Marital status was dichotomized into a binary variable assigning value 1 if the respondent reports to be "being legally married, or in legally registered civil union" and 0 otherwise. Household size is a discrete variable ranging from 1 to 10. Socio-economic variables include education, household income, occupation, being unemployed and being retired. According to the ISCED-97 classification, we consider three levels of education: 1) low education (no educational certificates or primary school certificates or lower secondary education); 2) medium education (upper secondary education or high school graduation); and 3) high education (university degree or postgraduate). Income information is based on total annual household income, after tax and compulsory deductions, from all sources. A measure of occupational status is constructed from the ISCO-08 classification. We have grouped occupations into two categories, named "white collar" and "blue collar", in order to capture some aspects of the labor market composition. Moreover, we include two dummy indicators for unemployment status and retirement, and a dichotomous variable indicating

whether the individual have worked abroad for at least six month.

We also control for health status of respondents introducing information on self-assessed health and functioning and disability status. Concerning self-perceived health, the following self-assessed health (SAH henceforth) status question was asked: "How is your health in general? Would you say it is very good, good, fair, poor, very poor". SAH was therefore measured on a five-point scale from "very good" (score 5) to "very poor" (score 1) and treated as an ordered categorical variable. The use of SAH as an indicator of health status is supported by evidence which shows a strong predictive relationship between individual's self-rating of health and morbidity (Ellen L. Idler (1997); Kennedy et al. (1998)). We have dichotomized the SAH into a binary variable assuming value 1 if individuals declare that their health is very good, good, and 0 otherwise (see Balia and Jones (2008), and Di Novi (2010)). As regards functional and mental impairments, respondents were asked to respond to the following question: "Are you hampered in your daily activities in any way by any longstanding illness, or disability, infirmity or mental health problem? If yes, is that a lot or to some extent?" We therefore measure disability by constructing a dummy indicator which assumes value 1 whether the individual reports to experience limitations in daily activities (" a lot" and "to some extent"), and zero otherwise.

Self-reported responses on topics such as religion, politic involvement and trust are used to control for other non-economic determinants of attitudes toward immigration different from those (potentially) captured by our linguistic marker. As regards religion, we include a dummy indicator to capture the intensity of religion's feelings. The degree of political interest was measured by individual responses to the following question: "How interested would you say you are in politics - Are you very interested, quite interested, hardly interested or not interested at all?". We have dichotomized responses into a binary variable which assumes value 1 if the respondent reports to be very interested or quite interested, and 0 otherwise. Trust attitudes were measured on a 10 point scale (from 0 - not trust at all- to 10 - trust). Individuals revealing values equal or greater than 6 are considered "trustful". As a sample selection criterium, we exclude respondents whose parents were born abroad from our sample

(*i.e.*, we exclude the population of second-generation immigrants). In addition, we further control for belonging to a minority ethnic group within the country.

4 Empirical Strategy and Results

In order to investigate the relationship between attitudes toward immigration and the linguistic marker as a proxy for individual general attitudes toward uncertainty we estimate the following equation:

$$ATI_{i,c,y} = \alpha + \beta IRR_i + \gamma X_{i,c,y} + \lambda Country_c + \theta Year_y + \epsilon_{i,c,y} \tag{1}$$

where $ATI_{i,c,y}$ is a variable that describes attitudes toward immigration by individual i in region r on survey year (round) y. We consider the degree of individual intolerance toward immigration both as an ordinal variable and as a binary coded variable equal to 1 for high and intermediate degrees of intolerance and 0 otherwise. IRR_i is the linguistic variation indicator for each individual. $X_{i,c,y}$ is a vector of individual level characteristics; $Country_c$ are country fixed effects, to control for unobserved fixed differences across country. $Year_y$ are survey-year fixed effects to control for country policy changes, which may affect attitudes toward immigration. In all regressions, the standard errors are clustered at the region level.

In addition to the entire set of 31 European countries and Israel, we also consider a restricted sample of 11 linguistically heterogeneous countries. In such a way we are able to compare individuals living in similar institutional frameworks but differing in their linguistic backgrounds. We correct for the fact that in some countries respondents have different probabilities to be part of the sample due to the sampling design used by applying a specific design and population size weights.[10] In all model specifications we control for country and round fixed effects. As for the empirical strategy, in all regressions with the ordinal

---

[10]The design weights are computed as the inverse of the inclusion probabilities and then scaled such that their sum equals the net sample size. The population size weights are the same for all persons within a country but differ across countries. These weights correct for the fact that most countries taking part in the ESS have different population sizes but similar sample sizes.

dependent variable we apply the ordered probit estimation technique, while in the case of a binary coded dependent variable we use the standard probit estimation. We do not report the estimated coefficients for some controls (marital status, household size, interest in politics, health status, working experiences abroad and religiosity) for the sake of space.[11] All the coefficients are marginal effects.

4.1 Perceptions of the effects of immigration on the economy, quality of life, and culture

Table 1 reports the estimation coefficients from the ordered probit model for the probability of high intolerance toward immigration. Equations 1-3 consider our linguistic variable (Irrealis) as a limited discrete variable (ranging from 0 to 6), while Models 4-6 include the categorized version of Irrealis. We also consider, in Equations 7-9, each class of Irrealis separately and use Irrealis = 0 as a reference category. The coefficients associated to linguistic markers are highly significant in almost all model specifications. The probability of being intolerant increases with Irrealis at a decreasing rate (the coefficient on the squared term is negative and significant at the 1% significance level). The coefficient on the second category of Irrealis (*i.e..* Irr_Cat2, two or three non-indicative moods across six Irrealis contexts) in Equation 4 indicates that being a strong Irrealis speaker increases the probability of high intolerance by roughly 6%. This result suggests that individuals equal in all observable aspects except in the number of non-indicative moods in their respective languages, have different degrees of general intolerance toward immigration. The marginal effect of Irrealis on cultural and economic concerns about immigration is somewhat lower (4%) and it is not monotonic. The association between Irrealis and intolerance is even stronger if we consider all intolerant individuals with respect to those who declare to be indifferent toward immigration and those with a relatively low levels of intolerance (Table 2). Individuals speaking intensive Irrealis languages have on average 22% more chance to be intolerant with respect to low intensity Irrealis speakers. These effects are somewhat lower in the case of economic (14%) and cultural (18%) concerns. In Table 3 we restrict our sample to individuals living in

---

[11]The regression results including these additional controls are available upon request

linguistically heterogeneous countries only. Since the incidence of moodless speakers (*i.e.,* those with Irrealis = 0) is particularly low in these countries (3%), we do not consider any categorization of Irrealis with Irrealis = 0 as a reference category. The results are in line with those in Tables 1 and 2, confirming that similar individuals living in a very close territorial proximity but speaking languages with different Irrealis differ in their attitudes toward immigration, *ceteris paribus.*

Females are on average less intolerant than men even though this effect is not very strong and not always statistically different from zero. Only in the case of economic concerns about immigration, females result more intolerant than men. Higher levels of education are in general associated with lower levels of intolerance. Highly educated individuals have on average 8% less chance of being intolerant and roughly 3% less chance of being very intolerant with respect to individuals with medium educational attainments. In line with the existing literature we also find that wealthier individuals seem less intolerant than poorer ones. Regarding the occupational status, being a white collar correlates negatively with the level of intolerance. Unemployment, on the other hand, is positively and significantly correlated to individual degree of intolerance in almost all models considering the whole set of countries (Tables 1 and 2). However, being unemployed is important only for economic concerns about immigration in linguistically heterogeneous countries, with unemployed individuals being by 3.5% more intolerant than employed ones (Table 3, Equation 5). Individuals with higher level of trust in others are on average less intolerant. Since trust and uncertainty (approximated by Irrealis) may go in opposite directions, we also considered the interaction between the individual self declared level of trust and Irrealis (tables available upon request). For a given level of trust, more Irrealis translates into higher levels of intolerance toward immigration.

Table 1: Ordered Probit (Marginal Effects): Probability of being Intolerant toward Immigration: **31 European Countries + Israel**

	General concern	Economic concern	Cultural concern	General concern	Economic concern	Cultural concern	General concern	Economic concern	Cultural concern
Irrealis	0.056***	0.034***	0.036**						
	(0.009)	(0.008)	(0.015)						
Irrealis Sq.	-0.009***	-0.006***	-0.008***						
	(0.002)	(0.002)	(0.002)						
Irr_Cat1				0.076***	0.048***	0.051***			
				(0.012)	(0.010)	(0.014)			
Irr_Cat2				0.060***	0.041***	0.040**			
				(0.018)	(0.012)	(0.017)			
Irrealis = 2							0.074***	0.050***	0.064***
							(0.012)	(0.011)	(0.018)
Irrealis = 3							0.079***	0.041***	0.022
							(0.015)	(0.010)	(0.018)
Irrealis = 4							0.061***	0.041***	0.033
							(0.018)	(0.014)	(0.022)
Irrealis = 6							0.058***	0.018	0.009
							(0.022)	(0.026)	(0.021)
Female	-0.003**	0.014***	-0.009***	-0.004**	0.014***	-0.009***	-0.004**	0.014***	-0.009***
	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)
Age	0.000	-0.000	-0.001***	0.000	-0.000	-0.001***	0.000	-0.000	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HH Income	-0.002***	-0.004***	-0.002***	-0.002***	-0.004***	-0.002***	-0.002***	-0.004***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Low Edu.	0.012***	0.018***	0.020***	0.012***	0.018***	0.019***	0.012***	0.018***	0.020***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
High Edu.	-0.027***	-0.036***	-0.028***	-0.027***	-0.036***	-0.028***	-0.027***	-0.036***	-0.028***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
White Collar	-0.015***	-0.024***	-0.017***	-0.015***	-0.024***	-0.017***	-0.015***	-0.024***	-0.016***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Trust	-0.053***	-0.063***	-0.045***	-0.053***	-0.063***	-0.045***	-0.053***	-0.063***	-0.046***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Unemployed	0.007**	0.009**	0.003	0.008**	0.009**	0.003	0.008**	0.009**	0.003
	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)	(0.003)
Retired	-0.000	-0.005	0.002	-0.000	-0.005	0.002	-0.000	-0.005	0.002
	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)
Country d.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round d.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	77366	77632	77799	77366	77632	77799	77366	77632	77799
N. Countries	32	32	32	32	32	32	32	32	32

Notes: *The method of estimation is Ordered Probit. Robust standard errors in parentheses. Reference categories: 0 Irrealis, Male, Medium Education, Blue Collar, Low Trust, Employed. Not reported: Age Squared, Marital Status, Religious, Minority, Household Size, Health Status, Working Experience Abroad.* ** $p < 0.05$, *** $p < 0.01$.

Table 2: Probit (Marginal Effects): Probability of being Intolerant toward Immigration: **31 European Countries + Israel**. Dependent variable: high and intermediate intolerance (dichotomous).

	General concern	Economic concern	Cultural concern	General concern	Economic concern	Cultural concern	General concern	Economic concern	Cultural concern
Irrealis	0.181***	0.103***	0.132**						
	(0.045)	(0.025)	(0.065)						
Irrealis Sq.	-0.031***	-0.018***	-0.026**						
	(0.007)	(0.005)	(0.010)						
Irr_Cat1				0.261***	0.155***	0.203***			
				(0.053)	(0.026)	(0.059)			
Irr_Cat2				0.216***	0.144***	0.177***			
				(0.064)	(0.033)	(0.065)			
Irrealis = 2							0.265***	0.161***	0.237***
							(0.054)	(0.028)	(0.068)
Irrealis = 3							0.247***	0.132***	0.142**
							(0.058)	(0.030)	(0.069)
Irrealis = 4							0.215***	0.139***	0.167**
							(0.067)	(0.038)	(0.074)
Irrealis = 6							0.155**	0.093	0.091
							(0.071)	(0.074)	(0.077)
Female	-0.011**	0.023***	-0.023***	-0.011**	0.023***	-0.023***	-0.011**	0.023***	-0.023***
	(0.005)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)
Age	0.001	-0.001	-0.003***	0.001	-0.001	-0.003***	0.001	-0.001	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
HH Income	-0.007***	-0.008***	-0.005***	-0.007***	-0.008***	-0.005***	-0.007***	-0.008***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Low Edu.	0.031***	0.044***	0.051***	0.031***	0.044***	0.051***	0.031***	0.044***	0.051***
	(0.006)	(0.005)	(0.005)	(0.006)	(0.005)	(0.006)	(0.006)	(0.005)	(0.005)
High Edu.	-0.078***	-0.092***	-0.074***	-0.078***	-0.092***	-0.074***	-0.078***	-0.092***	-0.075***
	(0.006)	(0.005)	(0.006)	(0.006)	(0.005)	(0.006)	(0.006)	(0.005)	(0.006)
White Collar	-0.042***	-0.054***	-0.040***	-0.042***	-0.054***	-0.040***	-0.042***	-0.054***	-0.039***
	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.006)
Trust	-0.126***	-0.134***	-0.108***	-0.127***	-0.134***	-0.108***	-0.127***	-0.135***	-0.108***
	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.004)	(0.004)
Unemployed	0.019**	0.018**	0.007	0.019**	0.018**	0.006	0.019**	0.018**	0.007
	(0.009)	(0.009)	(0.008)	(0.009)	(0.009)	(0.008)	(0.009)	(0.009)	(0.008)
Retired	0.003	-0.016**	-0.002	0.003	-0.016**	-0.002	0.003	-0.016**	-0.002
	(0.007)	(0.007)	(0.006)	(0.007)	(0.007)	(0.006)	(0.007)	(0.007)	(0.006)
Country d.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round d.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	77366	77632	77799	77366	77632	77799	77366	77632	77799
N. Countries	32	32	32	32	32	32	32	32	32

Notes: *The method of estimation is Probit. Robust standard errors in parentheses. Reference categories: 0 Irrealis, Male, Medium Education, Blue Collar, Low Trust, Employed. Not reported: Age Squared, Marital Status, Religious, Minority, Household Size, Health Status, Working Experience Abroad.* ** $p < 0.05$, *** $p < 0.01$.

19

Table 3: Marginal Effects: Probability of being Intolerant toward Immigration: **11 Linguistically Heterogeneous Countries**

	General concern **O. Probit**	Economic concern **O. Probit**	Cultural concern **O. Probit**	General concern **Probit**	Economic concern **Probit**	Cultural concern **Probit**
Irrealis	0.058***	0.033***	0.035**	0.200***	0.107***	0.146**
	(0.010)	(0.007)	(0.014)	(0.050)	(0.027)	(0.071)
Irrealis Sq.	-0.009***	-0.005***	-0.007***	-0.034***	-0.018***	-0.028**
	(0.002)	(0.002)	(0.002)	(0.008)	(0.005)	(0.012)
female	-0.004	0.011***	-0.010***	-0.016**	0.017**	-0.020***
	(0.003)	(0.003)	(0.002)	(0.007)	(0.007)	(0.006)
Age	0.001	0.000	-0.000	0.002	-0.000	-0.002
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
HH Income	-0.001	-0.003***	-0.001	-0.004**	-0.006***	-0.003
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Low Edu.	0.010***	0.017***	0.019***	0.015	0.029***	0.043***
	(0.003)	(0.004)	(0.004)	(0.010)	(0.010)	(0.011)
High Edu.	-0.017***	-0.027***	-0.018***	-0.059***	-0.072***	-0.049***
	(0.002)	(0.003)	(0.002)	(0.010)	(0.009)	(0.010)
White Collar	-0.012***	-0.023***	-0.012***	-0.042***	-0.055***	-0.032***
	(0.002)	(0.003)	(0.003)	(0.007)	(0.008)	(0.007)
Trust	-0.044***	-0.058***	-0.037***	-0.117***	-0.131***	-0.095***
	(0.004)	(0.004)	(0.003)	(0.009)	(0.008)	(0.008)
Unemployed	0.003	0.010	0.000	0.006	0.035**	0.000
	(0.005)	(0.006)	(0.005)	(0.016)	(0.015)	(0.013)
Retired	-0.001	-0.010	0.001	-0.002	-0.020	-0.009
	(0.004)	(0.005)	(0.003)	(0.013)	(0.013)	(0.010)
Country d.	Yes	Yes	Yes	Yes	Yes	Yes
Round d.	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	25819	26096	26070	25819	26096	26070
N. Countries	11	11	11	11	11	11

Notes: *Robust standard errors in parentheses. Reference categories: Male, Medium Education, Blue Collar, Low Trust, Employed. Not reported: Age Squared, Marital Status, Religious, Minority, Household Size, Health Status, Working Experience Abroad.*
** $p < 0.05$, *** $p < 0.01$.

Figure 2 shows the predicted probability of very high intolerance toward immigration (based on the estimates from Table 1) for three Irrealis categories. The predicted probability of being highly intolerant is 11% (in the case of cultural concerns) and 14% (in the case of economic concerns) for intensive Irrealis speakers. The difference in predicted probabilities is even larger if we consider both high and intermediate levels of intolerance (based on the estimates from Table 2). Individuals speaking very intensive Irrealis languages have on average 43% probability of being intolerant with respect to 26.5% for low and intermediate

Irrealis users. The predicted probability of very high intolerance toward immigration is even higher in the case of economic concerns related to immigration (Figure 3).
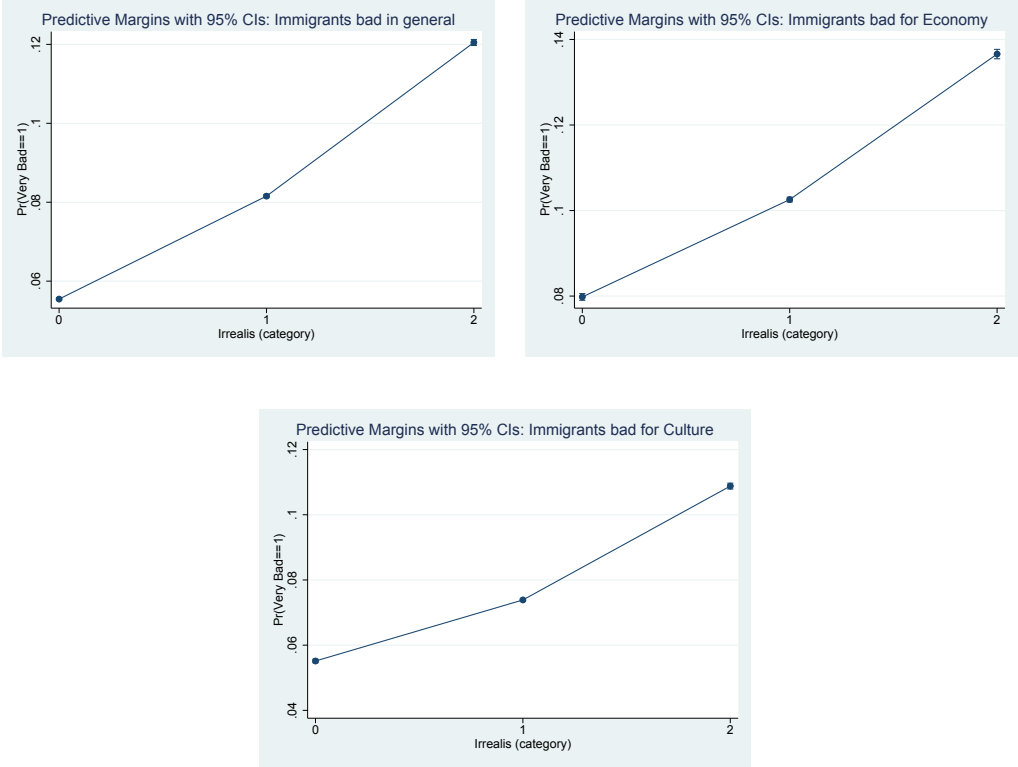
Figure 2: Predicted probability of high intolerance toward immigration: general, economic and cultural concerns.
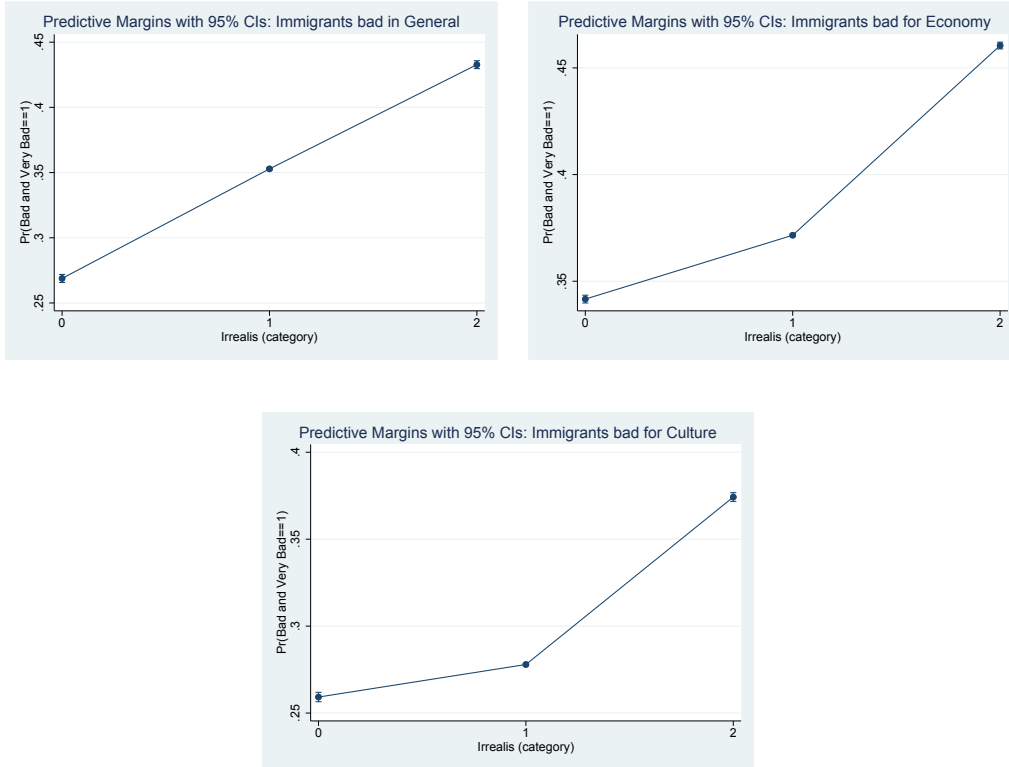
Figure 3: Predicted probability of high and intermediate intolerance toward immigration: general, economic and cultural concerns.

4.2 Immigration Policy Opinions

Tables 4 - 6 summarize the results for individual preferences about admission of people of same or different race and from poor non-EU sending countries. As for general, economic and cultural concerns, the coefficients associated to linguistic markers remain highly significant for each immigration policy question.

The marginal effect of the second category of Irrealis in Equation 4 (Table 4) suggests that being a strong Irrealis speaker increases the probability of being concerned about inflows of immigrants who share the same ethnicity by roughly 10%. The association between Irrealis and concerns about immigration inflows does not substantially differ in terms of magnitude if we consider immigrants from poor non-EU sending countries (table 4, Equation 6). Interestingly, the intensity of Irrealis usage is strongly associated with negative opinions

about inflows of immigrants of the same race with respect to those of different ethnicity (table 5, columns 1-2, and 4-5). As suggested by Card et al. (2012), this finding may be related to the fact that native populations perceive the immigrants of the same race (predominantly European in our case), as a closer substitutes for their labor opportunities. A comparison of the coefficients in Tables 4 and 5 (whole set of countries) to those of Table 6 (only linguistically heterogeneous countries) does not highlight any substantial differences in terms of magnitude of the effect associated to linguistic marker, for each of the immigration policy opinion considered.

The estimated coefficients associated to the other explanatory variables are in line with those obtained in the previous specifications (Table 1, 2 and 3). Females tend to be more favourable toward immigration inflows than men, while respondents with a high level of education are on average less intolerant towards inflows of immigrants with respect to individuals with medium educational attainments. In line with the existin literature, being a white collar worker is significantly and negatively correlated with unfavourable immigration policy opinions. Moreover, high level of trust in others and high level of wealth significantly correlate with individual preferences over immigration policy, highlighting a negative association between these individual characteristics and the reluctance to host immigrants.

In general, the results suggest that even after controlling for the individual income and wealth endowments, as well as for their socio-economic and health status, education level, political interests, levels of trust and the intensity of religious feelings, a more frequent use of Irrealis is associated to higher degrees of intolerance toward immigration. As shown in Kovacic et al. (2015), this may be due to the fact that intensive users of Irrealis perceive the world as generally more uncertain, and hence result to be more cautious and reluctant toward immigration.

Table 4: Ordered Probit (Marginal Effects): Probability of being Intolerant toward Immigration: **31 European Countries + Israel**

	Immigration Same Race	Immigration Different Race	Immigration Poor non-EU	Immigration Same Race	Immigration Different Race	Immigration Poor non-EU	Immigration Same Race	Immigration Different Race	Immigration Poor non-EU
Irrealis	0.068***	0.066***	0.085***						
	(0.026)	(0.009)	(0.016)						
Irrealis Sq.	-0.010***	-0.013***	-0.015***						
	(0.003)	(0.002)	(0.003)						
Irr_Cat1				0.079***	0.090***	0.116***			
				(0.024)	(0.009)	(0.014)			
Irr_Cat2				0.102**	0.059***	0.108***			
				(0.048)	(0.012)	(0.023)			
Irrealis = 2							0.079***	0.096***	0.123***
							(0.023)	(0.010)	(0.015)
Irrealis = 3							0.078***	0.071***	0.089***
							(0.027)	(0.013)	(0.019)
Irrealis = 4							0.108**	0.056***	0.106***
							(0.052)	(0.014)	(0.026)
Irrealis = 6							0.036	0.020	0.035
							(0.023)	(0.023)	(0.045)
Female	-0.002	-0.005***	-0.010***	-0.002	-0.005***	-0.010***	-0.002	-0.005***	-0.010***
	(0.001)	(0.002)	(0.003)	(0.001)	(0.002)	(0.003)	(0.001)	(0.002)	(0.003)
Income	-0.002***	-0.003***	-0.002***	-0.002***	-0.003***	-0.002***	-0.002***	-0.003***	-0.002***
	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Low Education	0.015***	0.024***	0.019***	0.015***	0.024***	0.019***	0.015***	0.024***	0.019***
	(0.002)	(0.003)	(0.004)	(0.002)	(0.003)	(0.004)	(0.002)	(0.003)	(0.004)
High Education	-0.025***	-0.044***	-0.050***	-0.025***	-0.044***	-0.050***	-0.025***	-0.044***	-0.050***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)
White Collar	-0.017***	-0.025***	-0.026***	-0.017***	-0.025***	-0.026***	-0.017***	-0.025***	-0.026***
	(0.001)	(0.003)	(0.003)	(0.001)	(0.003)	(0.003)	(0.001)	(0.003)	(0.003)
Trust	-0.029***	-0.051***	-0.062***	-0.029***	-0.051***	-0.062***	-0.029***	-0.052***	-0.063***
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
Unemployed	0.002	0.014***	0.015***	0.002	0.014***	0.015***	0.002	0.015***	0.015***
	(0.003)	(0.004)	(0.005)	(0.003)	(0.004)	(0.005)	(0.003)	(0.004)	(0.005)
Retired	-0.004	0.002	0.004	-0.004	0.002	0.004	-0.004	0.002	0.004
	(0.002)	(0.003)	(0.004)	(0.002)	(0.003)	(0.004)	(0.002)	(0.003)	(0.004)
Country d.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round d.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	78340	78244	77923	78340	78244	77923	78340	78244	77923
N. Countries	32	32	32	32	32	32	32	32	32

Notes: *The method of estimation is Ordered Probit. Robust standard errors in parentheses. Reference categories: 0 Irrealis, Male, Medium Education, Blue Collar, Low Trust, Employed. Not reported: Age Squared, Marital Status, Religious, Minority, Household Size, Health Status, Working Experience Abroad.* ** $p < 0.05$, *** $p < 0.01$.

Table 5: Probit (Marginal Effects): Probability of being Intolerant toward Immigration: **31 European Countries + Israel**. Dependent variable: high and intermediate intolerance (dichotomous).

	Immigration Same Race	Immigration Different Race	Immigration Poor non-EU	Immigration Same Race	Immigration Different Race	Immigration Poor non-EU	Immigration Same Race	Immigration Different Race	Immigration Poor non-EU
Irrealis	0.178***	0.147***	0.149***						
	(0.053)	(0.025)	(0.024)						
Irrealis Sq.	-0.027***	-0.026***	-0.026***						
	(0.007)	(0.005)	(0.004)						
Irr_Cat1				0.242***	0.232***	0.241***			
				(0.045)	(0.018)	(0.018)			
Irr_Cat2				0.269***	0.200***	0.241***			
				(0.065)	(0.025)	(0.027)			
Irrealis = 2							0.251***	0.244***	0.252***
							(0.046)	(0.021)	(0.020)
Irrealis = 3							0.218***	0.186***	0.187***
							(0.052)	(0.030)	(0.032)
Irrealis = 4							0.265***	0.182***	0.224***
							(0.071)	(0.031)	(0.032)
Irrealis = 6							0.210***	0.200***	0.177***
							(0.072)	(0.043)	(0.065)
Female	-0.010**	-0.011**	-0.015***	-0.010**	-0.011**	-0.015***	-0.010**	-0.011**	-0.016***
	(0.004)	(0.005)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.005)	(0.004)
HH Income	-0.008***	-0.005***	-0.003***	-0.008***	-0.005***	-0.003**	-0.008***	-0.005***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Low Edu.	0.043***	0.048***	0.028***	0.043***	0.048***	0.028***	0.043***	0.048***	0.028***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
High Edu.	-0.074***	-0.101***	-0.091***	-0.074***	-0.101***	-0.091***	-0.075***	-0.102***	-0.091***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
White Collar	-0.042***	-0.044***	-0.040***	-0.042***	-0.044***	-0.039***	-0.041***	-0.044***	-0.039***
	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)
Trust	-0.078***	-0.099***	-0.094***	-0.078***	-0.099***	-0.095***	-0.078***	-0.100***	-0.095***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Unemployed	-0.001	0.022**	0.014	-0.001	0.022**	0.014	-0.001	0.022**	0.014
	(0.007)	(0.009)	(0.008)	(0.007)	(0.009)	(0.008)	(0.007)	(0.009)	(0.008)
Retired	-0.008	0.006	0.008	-0.008	0.006	0.008	-0.008	0.005	0.007
	(0.006)	(0.007)	(0.007)	(0.006)	(0.007)	(0.007)	(0.006)	(0.007)	(0.007)
Country d.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round d.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	78340	78244	77923	78340	78244	77923	78340	78244	77923
N. Countries	32	32	32	32	32	32	32	32	32

Notes: *The method of estimation is Ordered Probit. Robust standard errors in parentheses. Reference categories: 0 Irrealis, Male, Medium Education, Blue Collar, Low Trust, Employed. Not reported: Age Squared, Marital Status, Religious, Minority, Household Size, Health Status, Working Experience Abroad.* **$p < 0.05$,** ***$p < 0.01$.**

Table 6: Marginal Effects: Probability of being Intolerant toward Immigration: **11 Linguistically Heterogeneous Countries**

	Immigration Same Race **O. Probit**	Immigration Different Race **O. Probit**	Immigration Poor non-EU **O. Probit**	Immigration Same Race **Probit**	Immigration Different Race **Probit**	Immigration Poor non-EU **Probit**
Irrealis	0.070**	0.070***	0.098***	0.181***	0.160***	0.170***
	(0.029)	(0.010)	(0.017)	(0.057)	(0.027)	(0.026)
Irrealis Sq.	-0.010***	-0.013***	-0.017***	-0.026***	-0.028***	-0.029***
	(0.004)	(0.002)	(0.003)	(0.008)	(0.006)	(0.005)
Female	-0.006**	-0.011***	-0.009	-0.024***	-0.026***	-0.019**
	(0.003)	(0.004)	(0.005)	(0.007)	(0.008)	(0.008)
HH Income	-0.002***	-0.003***	-0.001	-0.008***	-0.005**	-0.002
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Low Edu.	0.013***	0.016**	0.019***	0.038***	0.023**	0.024**
	(0.004)	(0.006)	(0.007)	(0.010)	(0.012)	(0.011)
High Edu.	-0.021***	-0.043***	-0.050***	-0.064***	-0.096***	-0.084***
	(0.003)	(0.003)	(0.005)	(0.009)	(0.009)	(0.010)
White Collar	-0.014***	-0.024***	-0.030***	-0.039***	-0.043***	-0.047***
	(0.003)	(0.005)	(0.005)	(0.007)	(0.010)	(0.009)
Trust	-0.024***	-0.048***	-0.061***	-0.074***	-0.095***	-0.093***
	(0.003)	(0.004)	(0.006)	(0.008)	(0.010)	(0.009)
Unemployed	0.007	0.026***	0.028***	0.010	0.050***	0.041**
	(0.005)	(0.009)	(0.011)	(0.013)	(0.017)	(0.016)
Retired	-0.008**	0.002	0.004	-0.017	0.015	0.014
	(0.004)	(0.006)	(0.008)	(0.012)	(0.013)	(0.013)
Country d.	Yes	Yes	Yes	Yes	Yes	Yes
Round d.	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	26427	26338	26201	26427	26338	26201
N. Countries	11	11	11	11	11	11

Notes: *Robust standard errors in parentheses. Reference categories: Male, Medium Education, Blue Collar, Low Trust, Employed. Not reported: Age Squared, Marital Status, Religious, Minority, Household Size, Health Status, Working Experience Abroad.*
** $p < 0.05$, *** $p < 0.01$.

5 Robustness and Sensitivity Checks

In addition to the subset of linguistically heterogeneous countries, we conducted additional robustness checks to test the empirical validity of our results. First, we included in the regressions, together with the individual-level controls, two regional economic variables drawn from the ESS contextual variables data: *the log of per capita GDP*, and *the net inflow of immigrants*[12]. We use per capita GDP as a proxy for the regional level of economic development. Concerning the net inflow of immigrants, it depends on both the receiving country's demand for immigrants (that is, immigration policies) and migrants' decisions to move, according to political and economic incentives. By including this variable, we account for the

---

[12]Net migration is defined as the difference between the number of immigrants and the number of emigrants.

intensity of the immigration phenomenon, which may influence the host country's general attitudes towards immigrants. Since GDP per capita and net inflow of immigrants may have a differentiated impact on the perception of immigration depending on individual education level and/or financial condition, we interact these variables with the individual educational attainment (as in Facchini and Mayda, 2009).

Second, we look at alternative sample selections. Some empirical studies suggest that individuals with different levels of education may have different opinions toward immigration (see, for instance, Dustmann et al., 2007; Mayda; 2006). There is an extensive literature suggesting that highly educated individuals are more favorable toward immigration compared to the less ones (Scheve and Slaughter 2001; Mayda 2006; Citrin et al., 1997; Dustmann and preston, 2007). A possible explanation is that individuals with a higher levels of education occupy more skilled positions, which are less threatened by labour market competition from unskilled immigrants (Card et al., 2012). However, this is true only when immigrants are on average less educated than natives. While this is valid in some countries, it is not in others (Facchini and Mayda, 2006). In order to rule out the possibility that our results are driven by education and, in particular, by some specific education category, we replicate our analysis on three subsamples: (i) highly educated individuals; (ii) individuals with medium level of education; and (iii) individuals with low level of education. [13]

Table 11 (in Appendix B) replicates the regression models 1-3 from Table 1 controlling also for the two regional economic variables. Since immigrants tend to be on average less educated than natives, for any level of GDP per capita, native individuals with a lower levels of education (and, hence, less skilled positions), may feel more threatened by labor market competition from unskilled immigrants, which may translate into higher degrees of intolerance. A similar reasoning applies to the intensity of the immigration phenomenon (approximated by the net flow of immigration).

The results in Table 11 show that there is a strong and significant association between Irrealis and the individual perception of immigration, independently of their education level,

---

[13]We also run our regression models on the linguistically heterogeneous countries countries. The results remain substantially unchanged. These regression results are available upon request.

regional GDP per capita and immigration inflows. The magnitudes of the coefficients associated to Irrealis are slightly reduced with respect to those in Table 1.

Table 12 (in Appendix B) reports the results for the three education subgroups, respectively. The coefficients associated to Irrealis indicate that in all education sub-categories, an increase in Irrealis is associated with a higher probability of being reluctant toward immigration, in all the models considered. Interestingly, lower educated individuals result more concerned with the cultural aspects of immigration and relatively less about its economic aspect.

Finally, we test whether our results hold true by replicating the analysis on specific age subgroups (20-30; 31-45; 46-60; over 60). After controlling for the whole set of individual-level variables, our results remain in general robust and substantially unchanged (Table 13 in Appendix B). The association between Irrealis and economic effects of immigration is higher for the youngest sub-group of individuals (aged 20-30), probably because working-age individuals tend to be more susceptible to labor market concerns. Interestingly, older respondents (over 60) seem more reluctant to cultural aspect of immigration, compared to the economic and generale ones. As for individual preferences about immigration policy, young respondents are on average more concerned about immigrants from same ethnicity, while older people (over60) seem to be more reluctant to host immigrants from poor non EU countries.

6 Concluding Remarks and Policy Implications

The purpose of this paper was to investigate the role of non-economic traits related to the perception of risk and uncertainty as potential driving factors of individual preferences over immigration. We use linguistic variation as an exogenous proxy for individual non-economic characteristics and find that, *ceteris paribus*, these traits play an important role in the determination of individual degree of tolerance toward immigration. In particular, individuals belonging to specific linguistic sub-groups (intensive Irrealis users) have significantly lower levels of tolerance with respect to identical individuals belonging to other linguistic sub-

groups. The choice of this specific marker has been driven by two major concerns. First, language is exogenous and represents a very slowly changing individual trait. Moreover, it is not a matter of choice, rather it is given and it is not influenced by immigration itself. Second, the linguistic markers correlate well with several individual attitudes, such as the perception of risk and uncertainty.

The empirical evidence provided in this paper sheds some light on possible policy interventions, especially regarding the social cohesion policies at the local level. Since there is a significant difference in attitudes toward immigration across European countries and regions, any policy intervention should be designed to improve relationships between host and immigrant communities and to promote social cohesion. In countries and/or regions where the reticence toward immigration is particularly accentuated, local governments should act in the direction of improving the understanding between host and immigrant communities, by enhancing the inclusion of migrants in local decision making, transparency of relevant financial decisions and building the bridges between natives and immigrants. All these inclusive proceedings should be aimed at reducing the level of fear and uncertainty of local native populations. Our empirical findings suggest that, in light of significant differences within and across EU regions in the perception and awareness of immigration, a uniform integration framework at the EU level probably is not the most efficient strategy to pursue. On the contrary, the policymakers should design an appropriate inclusive framework as a function of general public intrinsic attitudes and concerns about uncertainty deriving from the presence of immigrants and from the resulting social diversity.

Appendix A

Table 7: Summary statistics (all countries)

Variable	Mean	Std. Dev.	Min.	Max.	N
IRR Moods	2.512	1.636	0	6	112078
No IRR Moods	0.209	0.407	0	1	112078
2 or 3 IRR Moods	0.444	0.497	0	1	112078
4 or 6 IRR Moods	0.347	0.476	0	1	112078
Very Intolerant (general)	0.095	0.293	0	1	106613
Intolerant (general)	0.283	0.45	0	1	106613
Indifferent (general)	0.293	0.455	0	1	106613
Tolerant (general)	0.279	0.449	0	1	106613
Very Tolerant (general)	0.05	0.217	0	1	106613
Very Intolerant (economic)	0.117	0.321	0	1	106996
Intolerant (economic)	0.292	0.455	0	1	106996
Indifferent (economic)	0.237	0.425	0	1	106996
Tolerant (economic)	0.305	0.461	0	1	106996
Very Tolerant (economic)	0.049	0.216	0	1	106996
Very Intolerant (cultural)	0.087	0.282	0	1	107243
Intolerant (cultural)	0.235	0.424	0	1	107243
Indifferent (cultural)	0.205	0.404	0	1	107243
Tolerant (cultural)	0.376	0.484	0	1	107243
Very Tolerant (cultural)	0.097	0.296	0	1	107243
Immigration (same race)	2.812	0.9	1	4	108286
Immigration (different race)	2.502	0.915	1	4	108089
Immigration (poor non-EU)	2.38	0.936	1	4	107583
age	48.843	18.775	14	103	111846
age2	2738.113	1886.392	196	10609	111846
female	0.537	0.499	0	1	112078
income	5.176	2.806	1	10	88505
education	0.917	0.701	0	2	111802
white collar	0.651	0.477	0	1	99922
blue collar	0.349	0.477	0	1	99922
education	0.917	0.701	0	2	111802
trust	0.432	0.495	0	1	112078
married	0.488	0.5	0	1	112078
household size	2.684	1.396	1	10	111906
majority	0.957	0.203	0	1	112078

Variable	Mean	Std. Dev.	Min.	Max.	N
unemployed	0.052	0.222	0	1	112078
retired	0.277	0.447	0	1	112078
disabled	0.261	0.439	0	1	112078
good health	0.639	0.48	0	1	112078
politics	0.453	0.498	0	1	112078
atheist	0.287	0.452	0	1	112078

Table 8: Summary Statistics: Linguistically Heterogeneous Countries

Variable	Mean	Std. Dev.	Min.	Max.	N
Irrealis	2.903	1.041	0	6	37859
Irr_Cat0	0.033	0.179	0	1	37859
Irr_Cat1	0.578	0.494	0	1	37859
Irr_Cat2	0.389	0.488	0	1	37859
Very intolerant (general)	0.082	0.275	0	1	35175
Intolerant (general)	0.278	0.448	0	1	35175
Indifferent (general)	0.312	0.463	0	1	35175
Tolerant (general)	0.281	0.449	0	1	35175
Very Tolerant (general)	0.047	0.212	0	1	35175
Very Intolerant (economic)	0.108	0.311	0	1	35581
Intolerant (economic)	0.281	0.449	0	1	35581
Indifferent (economic)	0.238	0.426	0	1	35581
Tolerant (economic)	0.317	0.465	0	1	35581
Very Tolerant (economic)	0.056	0.23	0	1	35581
Very Intolerant (cultural)	0.077	0.267	0	1	35588
Intolerant (cultural)	0.214	0.41	0	1	35588
Indifferent (cultural)	0.201	0.401	0	1	35588
Tolerant (cultural)	0.402	0.49	0	1	35588
Very Tolerant (cultural)	0.105	0.307	0	1	35588
Immigration (same race)	2.85	0.906	1	4	36080
Immigration (different Race)	2.509	0.92	1	4	35921
Immigration (Poor non-EU)	2.355	0.945	1	4	35712

List of Countries: Albania (AL), Austria (AT), Belgium (BE), Bulgaria (BG), Switzerland (CH), Cyprus (CY), Czech Republic (CZ), Germany (DE), Denmark (DK), Estonia (EE), Spain (ES), Finland (FI), France (FR), Great Britain (GB), Greece (GR), Croatia (HR), Hungary (HU), Ireland (IE), Iceland (IS), Israel (IL), Italy (IT), Lithuania (LT), Netherlands

(NL), Norway (NO), Poland (PL), Portugal (PT), Russia (RU), Sweden (SE), Slovenia (SI), Slovakia (SK), Ukraine (UA), and Kosovo under UNSCR 1244/99 (XK).

List of Languages: Albanian, Arabic, Bulgarian, Catalan, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hebrew, Croatian, Hungarian, Icelandic, Italian, Lithuanian, Norwegian, Polish, Portuguese, Russian, Slovenian, Slovak, Spanish, Serbian, Swedish, Turkish, Ukrainian.

Table 9: Number of non-indicative moods (IRR) by language ((Kovacic et al., 2015))

Language	IRR	Language	IRR	Languege	IRR
Albanian	3	French	3	Portuguese	6
Arabic (IL, AC)	4	German	2	Portuguese (BR)	6
Basque	3	German (AU, CH)	2	Romanian	4
Belorussian	4	Greek	2	Russian	4
Bulgarian	2	Hebrew	0	Russian (IL, EE)	4
Catalan	3	Hungarian	4	Serbian	2
Croatian	2	Icelandic	6	Slovak	4
Czech	4	Irish	4	Slovenian	3
Danish	0	Italian	6	Spanish	4
Dutch	2	Latvian	4	Spanish (LA)	4
Dutch (BE)	2	Lithuanian	4	Swedish	0
English (GB)	0	Macedonian	2	Turkish	4
English (CA, USA)	0	Maltese	0	Ukrainian	4
Estonian	3	Norwegian	0	Welsh	3
Finnish	2	Polish	4		

Notes: *LA stays for Latin American countries, IL for Israel, EE for Estonia, AU for Austria, CH for Switzerland, BE for Belgium, BR for Brazil, CA for Canada, AC for Arab countries and for French speaking North-African countries, USA for the United States of America.*

Table 10: Distribution of Irrealis by Country

Country	Irr = 0	Irr = 2	Irr = 3	Irr = 4	Irr = 6
AL	0	.0043	.9914	0	.0043
AT	.0014	.9979	0	.0007	0
BE	.0040	**.6291**	**.3655**	.0007	.0007
BG	0	**.8969**	0	**.1031**	0
CH	.0047	**.7804**	**.1921**	.0017	**.0211**
CY	.0030	.9965	0	.0005	0
CZ	0	0	.0002	.9998	0
DE	.0018	.9974	0	.0008	0
DK	.9998	0	0	.0002	0
EE	0	0	**.9227**	**.0773**	0
ES	0	.0003	**.0819**	**.9178**	0
FI	**.0548**	**.9447**	.0003	.0002	0
FR	.0025	.0005	.9945	.0018	.0007
GB	.9916	0	.0079	.0005	0
GR	0	1	0	0	0
HR	.0037	.9949	0	.0015	0
HU	.0012	.0015	0	.9974	0
IE	.9935	0	.0003	.0062	0
IL	**.5648**	.0006	.0012	**.4328**	.0006
IS	.0043	0	0	0	.9957
IT	0	.0165	.0015	0	.9820
LT	.0003	0	0	.9997	0
NL	.0015	.9983	0	.0002	0
NO	.9990	.0005	0	.0005	0
PL	.0002	.0002	0	.9996	0
PT	.0008	0	.0003	.0008	.9982
RU	0	0	0	1	0
SE	.9990	.0002	.0002	.0005	0
SI	0	0	.9933	.0067	0
SK	0	0	0	1	0
UA	0	.0006	0	.9994	0
XK	0	**.2421**	**.7546**	.0033	0

Notes: *Linguistically heterogeneous (LH) countries in bold (Def: countries with linguistic majority <= 95%). 73% of LH countries have two or more languages with different Irrealis. Only three LH countries have languages with the same number of Irrealis (LT, SK, and UA).*

Appendix B

Table 11: Ordered Probit (Marginal Effects): Probability of being (highly) Intolerant toward Immigration

Linguistic marker	Immigration same race	Immigration different race	Immigration poor non-EU	General concern	Economic concern	Cultural concern
Irrealis	0.027***	0.060***	0.079***	0.045***	0.032***	0.020**
	(0.006)	(0.010)	(0.014)	(0.007)	(0.007)	(0.008)
Full set of regressors						
from Table 1	Yes	Yes	Yes	Yes	Yes	Yes
Country d.	Yes	Yes	Yes	Yes	Yes	Yes
Round d.	Yes	Yes	Yes	Yes	Yes	Yes
Additional Controls:						
GDP	Yes	Yes	Yes	Yes	Yes	Yes
Inflow	Yes	Yes	Yes	Yes	Yes	Yes
GDPxEdu	Yes	Yes	Yes	Yes	Yes	Yes
Inflow x Edu	Yes	Yes	Yes	Yes	Yes	Yes
N. Observations	54892	54852	54775	54515	54601	54784

Notes: *The method of estimation is Ordered probit. Robust standard errors in parentheses. Reference categories: 0 Irrealis, Male, Medium Education, Blue Collar, Low Trust, Employed.* ** $p < 0.05$, *** $p < 0.01$.

Table 12: Ordered Probit (Marginal Effects): Probability of being (highly) Intolerant toward Immigration

Education: High	Same Race	Different Race	Poor non-EU	General	Economic	Cultural
Irrealis	0.031***	0.040***	0.068***	0.048***	0.035**	0.013
	(0.012)	(0.007)	(0.015)	(0.014)	(0.014)	(0.016)
Irrealis Sq.	-0.004**	-0.007***	-0.011***	-0.008**	-0.005	-0.005
	(0.002)	(0.001)	(0.002)	(0.003)	(0.004)	(0.003)
N. Observations	18007	17988	17916	18586	18680	18545

Education: Medium	Same Race	Different Race	Poor non-EU	General	Economic	Cultural
Irrealis	0.066***	0.062***	0.074***	0.060***	0.036***	0.028
	(0.025)	(0.012)	(0.020)	(0.011)	(0.010)	(0.016)
Irrealis Sq.	-0.010***	-0.013***	-0.014***	-0.010***	-0.006***	-0.006***
	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
N. Observations	41281	41240	41025	40840	41006	41140

Education: Low	Same Race	Different Race	Poor non-EU	General	Economic	Cultural
Irrealis	0.097**	0.094***	0.102***	0.036***	0.026***	0.037***
	(0.042)	(0.027)	(0.029)	(0.008)	(0.007)	(0.009)
Irrealis Sq.	-0.014**	-0.018***	-0.018***	-0.006***	-0.005***	-0.007***
	(0.006)	(0.005)	(0.006)	(0.002)	(0.001)	(0.001)
N. Observations	19032	18997	18963	17920	17928	18094
Country d.	Yes	Yes	Yes	Yes	Yes	Yes
Round d.	Yes	Yes	Yes	Yes	Yes	Yes
N. Countries	32	32	32	32	32	32

Notes: *The method of estimation is Ordered Probit. Robust standard errors in parentheses. Additional individual level controls: age, age squared, female, income, white collar, trust, married, household size, unemployed, retired, disabled, good health, interest in politics, atheist, not minority. Reference categories: Male, Blue Collar, Low Trust, Employed, Low Interest in Politics, Intermediate and High Religiosity.* ** $p < 0.05$, *** $p < 0.01$.

Table 13: Ordered Probit (Marginal Effects): Probability of being (highly) Intolerant toward Immigration

Age subgroup:20-30	Same Race	Different Race	Poor non-EU	General	Economic	Cultural
Irrealis	0.060**	0.047***	0.067***	0.051***	0.039***	0.029**
	(0.028)	(0.016)	(0.016)	(0.012)	(0.014)	(0.014)
Irrealis Sq.	-0.007	-0.008**	-0.011***	-0.008***	-0.005	-0.004
	(0.004)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
N. Observations	10539	10539	10502	10473	10477	10510
Age subgroup:31-45	Same Race	Different Race	Poor non-EU	General	Economic	Cultural
Irrealis	0.087***	0.062***	0.064***	0.068***	0.032***	0.039***
	(0.029)	(0.013)	(0.024)	(0.014)	(0.011)	(0.015)
Irrealis Sq.	-0.012***	-0.012***	-0.010**	-0.010***	-0.006**	-0.007***
	(0.004)	(0.003)	(0.004)	(0.002)	(0.003)	(0.003)
N. Observations	24023	19667	19611	23827	19615	19672
Age subgroup:46-60	Same Race	Different Race	Poor non-EU	General	Economic	Cultural
Irrealis	0.052**	0.049***	0.068***	0.047***	0.025**	0.026
	(0.021)	(0.012)	(0.019)	(0.011)	(0.010)	(0.015)
Irrealis Sq.	-0.008***	-0.010***	-0.011**	-0.008***	-0.004	-0.007***
	(0.003)	(0.003)	(0.005)	(0.002)	(0.002)	(0.003)
N. Observations	21982	21946	21865	21779	21832	21912
Age subgroup:60+	Same Race	Different Race	Poor non-EU	General	Economic	Cultural
Irrealis	0.063***	0.090***	0.122***	0.065***	0.037***	0.041***
	(0.023)	(0.024)	(0.028)	(0.009)	(0.010)	(0.014)
Irrealis Sq.	-0.010***	-0.019***	-0.024***	-0.011***	-0.008***	-0.011***
	(0.003)	(0.005)	(0.005)	(0.002)	(0.002)	(0.003)
N. Observations	24855	24790	24649	24259	24419	24413
Country d.	Yes	Yes	Yes	Yes	Yes	Yes
Round d.	Yes	Yes	Yes	Yes	Yes	Yes
N. Countries	32	32	32	32	32	32

Notes: *The method of estimation is Ordered Probit. Robust standard errors in parentheses. Reference categories: Male, Blue Collar, Low Trust, Employed, Low Interest in Politics, Intermediate and High Religiosity. The estimated coefficients represent marginal effects on the probability of high and intermediate intolerance.* **$p < 0.05$**, *** $p < 0.01$.

References

Balia, S. and Jones, A. M. (2008). Mortality, lifestyle and socio-economic status. Journal of Health Economics, 27(1):1 – 26.

Card, D., Dustmann, C., and Preston, I. (2012). Immigration, wages, and compositional amenities. Journal of the European Economic Association, 10(1):78–119.

Chen, M. K. (2013). The Effect of Language on Economic Behavior: Evidence from Savings Rates, Health Behaviors, and Retirement Assets. American Economic Review, 103(2):690–731.

Di Novi, C. (2010). The influence of traffic-related pollution on individuals' life-style: results from the brfss. Health Economics, 19(11):1318–1344.

Dustmann, C. and Preston, I. (2007). Racial and economic factors in attitudes to immigration. The B.E. Journal of Economic Analysis & Policy, 7(1):1–41.

Ellen L. Idler, Y. B. (1997). Self-rated health and mortality: A review of twenty-seven community studies. Journal of Health and Social Behavior, 38(1):21–37.

Facchini, G. and Mayda, A. M. (2008). From individual attitudes towards migrants to migration policy outcomes: Theory and evidence. Economic Policy, 23:651–713.

Facchini, G. and Mayda, A. M. (2009). Does the welfare state affect individual attitudes toward immigrants? evidence across countries. The Review of Economics and Statistics, 91(2):295–314.

Fertig, M. and Schmidt, C. M. (2002). The perception of foreigners and jews in germany : a structural analysis of a large opinion survey.

Gang, I. N., Rivera-Batiz, F. L., and Yun, M.-S. (2002). Economic Strain, Ethnic Concentration and Attitudes Towards Foreigners in the European Union. IZA Discussion Papers 578, Institute for the Study of Labor (IZA).

Hainmueller, J. and Hopkins, D. J. (2014). Public attitudes toward immigration. Annual Review of Political Science, 17(1):225–249.

Kennedy, B., Kawachi, I., Glass, R., and Prothrow-Stith, D. (1998). Income distribution, socioeconomic status, and self-rated health in the united states: multilevel analysis. BMJ, Doi: http://dx.doi.org/10.1136/bmj.317.7163.917.

Kovacic, M., Bernhofer, J., and Costantini, F. (2015). Risk attitudes, investment behavior and linguistic variation. University Ca' Foscari of Venice, Dept. of Economics Research Paper Series No. 34/15. http://ssrn.com/abstract=2708465.

Mayda, A. M. (2006). Who Is Against Immigration? A Cross-Country Investigation of Individual Attitudes toward Immigrants. The Review of Economics and Statistics, 88(3):510–530.

O'Rourke, K. H. and Sinnott, R. (2006). The determinants of individual attitudes towards immigration. European Journal of Political Economy, 22(4):838 – 861.

Rothstein, B. and Thieroff, R. (2010). Mood in the Languages of Europe. Studies in language companion series. John Benjamins.

Sapir, E. (1921). Language: An Introduction to the Study of Speech. Harvest books. Harcourt, Brace.

Scheve, K. F. and Slaughter, M. J. (2001). Labor market competition and individual preferences over immigration policy. The Review of Economics and Statistics, 83(1):133–145.

Sides, J. and Citrin, J. (2007). European opinion about immigration: The role of identities, interests and information. British Journal of Political Science, 37:477–504.

Whorf, B. and Carroll, J. (1964). Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf. MIT language antropology. M.I.T. Press.