The Role of Culture in Hiring Discrimination

Evidence from a correspondence study in Wallonia and Flanders

Mémoire réalisé par
Malo Beguin

Promoteur(s)
Muriel Dejemeppe

Lecteur(s)
Vincent Vandenberghe

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Ecole d'économie de Louvain/UCL • Place Montesquieu 3 • 1348 Louvain-la-Neuve
Département des Sciences économiques/UNamur • Rempart de la Vierge 8 • 5000 Namur

Table of Contents

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ABSTRACT

We study the influence of culture on discrimination as an economic outcome. Using a correspondence study, we show that both Flemish and Walloon employers discriminate against Walloon job seekers. Then, we argue that culture is an explanatory variable for this discrimination. We also discuss about the potential utility of using the theory of discrimination as defined and applied in psychology to bring a deeper understanding of the types of discrimination that are studied in economics.

1. Introduction

Since some times, the following issue has been discussed in Belgian newspapers: is there a discrimination occurring against Walloon workers when applying for a job in Flanders? Billiet et al. (1990) showed that Walloon workers were perceived less hard-working than the Flemish workers. However, the European Social Survey and the European Value Survey indicate that Walloons would be more motivated to work than Flemings (Voss and Lebrun, 2006). In consequence, we asked ourselves three questions. First, what can be the explanation for this divergence in terms of behaviour towards work between Flemings and Walloons? To answer this, we investigated a part of the economic literature which studies the influence of culture on values and beliefs in social groups. In addition, this literature discusses the impact of those values and beliefs coming from culture on several economic outcomes. Therefore, we wonder if culture could partly explain the above difference between Walloons and Flemings. Second, does this belief that Walloons are lazier than Flemings can lead to discrimination from employers? Thus, we measured discrimination against Flemings and Walloons in both Flanders and Wallonia using a correspondence test. To do that, we used the database created in collaboration with Stijn Baert, Muriel Dejemeppe, Bart Cockx and students from Ghent University and UCL. Third, can culture in general and cultural differences between Walloons and Flemings explain discrimination from employers? In order to answer this question, we will talk about two channels that we used to show that culture can lead to discrimination. We will also see that psychology can give more insight on the reason why employers discriminate.

As a result of the fact that empirical studies in economics have not been dealing clearly with discrimination against cultural group, our experiment contributes to the literature. Indeed, we wish to measure the discrimination against Walloon and Flemish job seekers in Belgium which, as we will see in the discussion below, can be categorized as having different cultures (mostly linguistically speaking). More precisely, no other correspondence studies have been made concerning discrimination against linguistic groups, to the best of our knowledge. Yet, authors have expected linguistic discrimination to occur. For example, Lucy (1997) gives the hypothesis of linguistic relativity which consists of saying that the language a person speaks affects the way he views the world. If true, it might affect how individuals behave and how they perform at work, which consecutively can lead to discriminatory behaviors. Another interesting contribution that we make, as far as we know, is to bring some additional insight to the understanding of the cause of discrimination by confronting theories of discrimination from economics and from psychology.

Another important contribution of our study is the use of a correspondence study to find a causal link between cultural belonging and an economic outcome (discrimination). Indeed, no other paper in the literature of culture in economics has used this method. However, correspondence study allows us to avoid the bias caused by reverse causality and omitted variables which can be omnipresent in methods using social surveys, epidemiological approach, and laboratory studies. In addition, it is more realistic than laboratory studies which try to link social group belonging with values and beliefs since correspondence studies are field experiments. However, as we have seen, correspondence studies might present some drawbacks which we will discuss in regard to our experiment.

This thesis is structured in the following order. In section 2, we first present the main methods used in the economic literature to measure the impact of culture on economic outcomes. Then, we explain how economists measure hiring discrimination and, more specifically, we describe the correspondence test with its advantages and drawbacks. In section 3, we will give a short description of the institutional, historical, social, economic and political context of the separation of Belgium between two people, Flemings and Walloons. Then, section 4 will present our correspondence study which tries to measure the hiring discrimination between Walloons and Flemings in both Wallonia and Flanders. Section 5 gives the results from this experiment. In Section 6, we will discuss about the importance and the limitations of those results as well as about the influence of culture in our study. We will also briefly discuss about how psychology can bring more insight about the type of discrimination that we observe. Finally, we will conclude by summarizing this work and giving some ideas of future researches.

2. Literature Review

2.1. The literature of culture in economics

In the last two decades, economists have been increasingly more interested in the study of the impact of culture on economic outcomes. Along with many empirical studies, Guiso et al (2006) use the Webster dictionary to define culture: it is the set of "customary beliefs and values that ethnic, religious, and social groups[1] transmit fairly unchanged from

[1] A social group can be understood as a group sharing some characteristics which lead to social interactions among its members (Webster, 1979). For example, it can be socioeconomic or ethnic characteristics (Fernandez, 2010,

generation to generation" (p.2). On the one hand, beliefs (e.g., level of trust towards other people, belief in life after death, belief that politicians are corrupted, belief that everybody is equal, etc.) are what we hold as true (i.e.: prior, anterior to a truth). They affect the way we see the world and our opinions concerning other people's groups. On the other hand, values are what we think is important (i.e.: they are preferences) and thus it affects the way we choose (e.g., preference for redistribution, importance of family ties, importance of the individual in society, etc.) Given the above definition of culture, in order to find culture, **(1)** the first goal of the economists is to find social groups which transmit beliefs and values from generation to generation. They will say that culture explains beliefs and values when a causal link can be found between a social group and values and beliefs. Thus, if this is the case, they will use social group as a proxy for culture. **(2)** Their second goal is to show the impact of culture on economic outcomes through those beliefs and values (Alesina & Giuliano, 2015).

(1) First, how can we measure the impact on values and beliefs caused by the belonging to a social group? Two major ways have been investigated by economists: using social surveys and laboratory experiments.

Using social surveys

A first way to proceed is to use the information available in social surveys. There exist major surveys such as the World Values Survey (WVS), the General Social Survey (GSS), or the European Social Survey (ESS) which give data on the membership to a particular social group and on beliefs and values (Alesina & Giuliano, 2015). As a result, a social group can be linked to some values and beliefs. For example, using the WVS, Guiso et al (2003) find that, controlling for individual characteristics, Catholics are on average 3.8% more willing than non-religious people to consider parsimony as an important value to transmit to their children, ceteris paribus.

However, the interpretation of these correlations between beliefs and values and social groups is limited because there is a reverse causality issue. Indeed, in the example above, people might value parsimony more and become religious as a consequence, or the other way around. Consequently, we would like to find a causal link in order to measure the effect of the belonging to a social group on values and beliefs. Some authors were able to find this causal link in two different manners. First, it can be assumed that culture is transmitted by the parents and their ancestors (vertical transmission[2]). As a result, the ancestors' cultural group is given to the individual and, thus, it explains his values and beliefs and not the other way around. For example, Guiso et al (2003) defend that religion can explain the level of trust towards others in the society by assuming that religious background is given to the individuals by their parents. Thus, they cannot change that their parents are religious. Assuming this, individual's belief such as trust cannot explain the parents' religion but the reverse must be true since a correlation between religion belonging and trust level toward other people has been measured (for other example of papers using this method, see Alesina and Giuliano, 2013; Galasso and Profeta, 2012; and Duranton et al, 2009).

Secondly, another manner to find a causal link has been to use regression discontinuity design. Regression discontinuity design allows finding a causal link if a discontinuity in the outcome variable between the control group and the treatment group is found when a change of policy occurs (Cameron & Trivedi, 2005). For example, Guiso et al (2003) found that the change in religious doctrine due to Vatican II Council[3] had a major impact on the trust variable for the religious generations younger than Vatican II compared to the older generations. Thus, the discontinuity between the level of trust of those two different generations allowed them to find a causal link. Brügger et al (2009) have also used this method in a spatial regression discontinuity approach were the Swiss linguistic frontier is used as the cutoff. They are able to show that the belonging to German or Latin-languages can explain attitudes toward work and opinions concerning working time, vacancy, and early retirement.

In addition to the causality issue, another problem with using the above definition of culture is endogeneity. Indeed, culture is not the only independent variable which explains beliefs and values that are common to a social group. For example, individual's health has been showed to

p.2). An ethnic group is a "group of people who share several characteristics based on civilization: religion, language, culture or other characteristics" (Dictionary of Unfamiliar Words, 2008, Ethnic group; Le Petit Robert I, 1978, p.704, Ethnie). A religious group is a group in which all the people share common religion (e.g. Muslims or Christians). In other words, a religious group can be an ethnic group (for example, Jewish people) or not (for example, Christianism is composed of multiple ethnic groups). The concept of social group includes religious and ethnic groups. Also, given the definition of culture used by Guiso et al (2006) and the above definition of social group, a culture is present in any social group which "transmits customary values and beliefs, fairly unchanged from generations to generations" (p.2).

[2] A vertical transmission is from old to young generations.

[3] The Church opened her dialogue with the other religions and abolished the obligation of mass in Latin.

impact the way women are viewed in society (Guiso & al, 2003) and, at the same time, to be correlated to religious belonging (Levin, 1991). In order to avoid omitted variables bias, one way to proceed has been to control for country fixed effects and for individual characteristics.

Using laboratory experiments

Another way to find a link between the belonging to a social group and beliefs and values is by the collection of experimental evidences (Guiso et al, 2006). The Ultimatum game and its variations, the Dictator game, the Trust game[4] or also the Public Goods game have been largely used in this literature (Henrich et al., 2001; Henrich, 2000). A simple Ultimatum game consists of a first player, the proposer, who offers a given allocation to a second one, the receiver. This second player either accepts and the allocation is split accordingly or rejects it and both players get nothing. The interest of this game is that experiments show outcomes that are very often different from what we would get with rational players following the standard economic thought. Instead of getting a result where the proposer keeps everything and offers nothing, the allocation is positive for both players. This is often explained as being an evidence of the existence of social preferences (Hindriks & Myles, 2013). If those games are performed with different cultural groups, the results might differ systematically between them. Consequently, it gives an idea of the impact of culture on beliefs (such as trust) or on values (such as altruism) (Guiso et al, 2006). For example, Henrich (2000) studies the effect of culture on altruism by taking two different populations: men from the Machiguenga tribe (Peruvian Amazon) and students from UCLA. Both groups played against each other alternatively as proposers and receivers. He finds that Machiguenga men give significantly less than UCLA students.

One drawback with laboratory experiments is that the small samples (using only few students or few people from one social group) might not be indicative for a larger population and thus they are hard to generalize to real-world cases. Indeed, even if the sample of individuals is chosen randomly and if the results are significant, it might be more difficult to rely on social interactions in a small sample to proxy social interactions among a whole population (Alesina & Giuliano, 2015). Also, although researchers control their samples in many dimensions, other determinants such as the economic background might affect the way people behave in those experiments (Fernandez, 2010). For example, Gil-White (2004) explains how, due to cultural differences, the respondents of his game did not understand it in the same way and it did not allow the author to interpret the correct impact of culture on beliefs and values. But more importantly, in a meta-analysis of the laboratory experiments about the effect of culture in ultimatum games, Oosterbeek et al (2004) show that differences in values and beliefs are not explaining[5] the different outcomes between social groups measured in these games. Thus, results from this type of studies must be taken carefully (Fernandez, 2010).

(2) Second, two approaches have been used by economists to show the impact of beliefs and values on economic outcomes: one based on social surveys data and one using the epidemiological approach with immigrant groups.

Using social surveys

First, using the data from social surveys (cf. above), a correlation can be estimated to study the impact of beliefs or values on economic outcomes. For example, Knack and Keefer (1997) find that trust is correlated to income. However, this method suffers from biases such as reverse causality and omitted variables. For example, more trust can explain a high income but high income can lead to more trust. Also, important omitted variables correlated to trust can be explaining economic outcomes (Guiso et al, 2006). In order to deal with that, researchers have tried various solutions. The use of instrumental variables for those beliefs or values and the control for country-level fixed effects (such as economic or institutional background) might have solved some of these issues. For example, Duranton et al (2009) control for regional fixed-effects which allows to seize omitted cross-country differences and Tabelini (2010) uses historical variables to instrument beliefs and values (Alesina & Giuliano, 2015). More precisely, he tries to explain European regional economic growth with four measures of culture: trust, control, respect, and obedience. Then, he uses past literacy level and past institutions as instruments for current trust. He shows that both are strongly correlated to the current trust level and he assumes that those instruments are valid because they do not influence directly current growth since they date from several generations ago. However, he recognizes that this exclusion restriction is hard to fulfill. Algan and Cahuc (2013) are not convinced either by his instruments. Indeed, both

[4] See definitions in Annexes for a description of this game which is interesting to find a correlation between social groups and trust level towards other people.

[5] They regress the results from these several laboratory experiments over values and beliefs and several economic indicators (Gini coefficient, GDP per capita, regional dummies, etc.)

instruments are likely to impact directly current growth. As a result, this method has had a hard time to be convincing in terms of explanatory power.

The Epidemiological Approach[6]

Using the same tools as health researchers to study a virus, it consists in the study of two social groups or more living under the same economic background (Fernandez, 2010). The idea is that, since their cultural heritage (such as cultural beliefs and values) is different, they should behave differently in the same environment (in terms of economic behavior). Usually, the groups that are studied are immigrants of second generations with natives in a given country (Alesina & Giuliano, 2015). For example, Alesina and Giuliano (2010) measured trust effect on growth using the past trust level of immigrants' descendants[7]. They measure the difference in trust level between natives and immigrant's descendants whose ancestors immigrated first between 1920 and 1950 and then between 1950 and 1980. This allows to get time-varying measures of the trust level and to calculate the impact of the change in trust level on the income per capita variation. As explained by Algan and Cahuc (2013), by using this method, reverse causality is avoided because only inherited trust is measured and it is possible to control for omitted time-constant variables and time-variant variables that are observable such as the economic environment. Also, since it does not use instrumental variables, the exclusion restriction is not an issue anymore. However, some issues can occur when we use this method. First, since we study immigrants, there can be a selection issue. They might have immigrated because they presented certain characteristics and, even though we study the second generation of immigrants, it is still possible that these characteristics are present. Second, there can be some omitted variables that are important to find unbiased results. Thus, one need to control for these and to prove that there is no relevant omitted variable left (Fernandez, 2010).

2.2. Hiring discrimination and culture

Since we wish to measure the impact of culture on discrimination, we now introduce this last concept. In addition to culture, discrimination is another subject that has been studied in economics. Discrimination is defined by the action of favoring or disfavoring someone only based on his belonging to a social group (Sue, 2003). Many works have tried to measure discrimination against several social groups such as those based on race, gender, sexual orientation, age, appearance, religion, etc. Discrimination can manifest itself through many different actions: avoiding to sit next to somebody, performing hate crime, setting rules differentiating some group at the organizational level or at the institutional level, or also defining the good cultural values to adopt and punishing those who do not follow them (Whitley & Kite, p.30, 2010). In economics, discrimination is a consequence of imperfect competition. It has been considered in two different domains. First, it can occur in the market of goods and services. Second, economists study discrimination in the labor market (Schwab, 1999). For example, identically productive workers can receive different wages and job seekers can have less probability to be hired, both because of their group belonging. In particular, hiring discrimination can occur from a loss of utility or from a lack of information of the employer[8]. It brings inequality among demographic groups through differential treatment. For example, a direct consequence of hiring discrimination is that groups experiencing it are enduring longer periods of unemployment which leads to lower welfare for them compared to groups that are not disadvantaged (Cahuc & Zylberberg, 2004). This section aims at showing one particular method measuring hiring discrimination, correspondence study, which allows to find a causal link between group belonging and discrimination. As a result, in regard to the literature of culture, the study of discrimination through correspondence tests can be pertinent to show the influence of culture on economic outcomes.

Correspondence studies

Many different empirical methods are relevant for the study of hiring discrimination[9] (i.e., vignette studies, natural experiment, audit studies, and correspondence studies). However, as we will see, correspondence studies present many advantages that will allow us to show the causal link between culture and economic outcomes in our experiment below.

As explained above, correspondence studies focus only on experiments studying hiring discrimination. While audit studies[10] essentially measure

[6] For a full review of this approach, see Fernandez (2010).

[7] Another of their paper (Alesina & Giuliano, 2013) uses the same method to measure the impact of family ties on growth.

[8] See later in correspondence studies §4 point (3).

[9] See in the definitions in Annexes for a short explanation about vignette studies and natural experiments.

[10] In brief, audit experiments consist of having actors attending for real-life job interviews or telephonic interviews. These actors are playing job seekers similar in every characteristic that are relevant for the job10 except the one that might cause discrimination and which researchers want to study. More precisely, not only do they

discrimination at the second stage of the hiring process (the interview), correspondence tests concentrate on the first stage (the sending of CVs). In correspondence studies, resumes (often with application letters) from fictive candidates belonging to two (or more) social groups are created in such a way that they are the same for the job-pertinent characteristics except the ones that we desire to study (race, ethnicity, gender, etc.) Then, the researchers post each candidate's resumes with a maximum difference in time of 48 hours to avoid bias coming from the systematic rejection of resumes received too late by employers. In order to understand the results that are obtained in such studies, we need to be aware of three cases (Riach & Rich, 2002). A first case that is potentially problematic is when both candidates' offers are not called back by the employer. Indeed, researchers must choose between two options. One can consider that no call backs means equal treatment but, also, he can see it as not rendering any valid information about discrimination. The choice between those two options is important because accounting for one or the other will significantly affect the results (Heckman, 1998). Riach and Rich (2002) reviewed a number of studies which have chosen one solution over the other. They conclude that not choosing any candidates should be accounted as not informative because many other reasons than equal treatment can make an employer refuse both candidates (for example, the number of applicants, the timing of sending the CV, or the economic situation). A second case is when one candidate is accepted and the other refused. Although this case shows an unequal treatment, it needs to be occurring recurrently towards the same candidate to show discrimination. To test this, Riach and Rich (2002) advice to calculate the *net discrimination*[11]. Finally, both candidates can be accepted. In this case, it can be considered as being equal treatment (Riach and Rich, 2002). In addition to the net discrimination measure, the call-back rate can also be rendered. The call-back rate is the ratio of the number of positive call-backs over the total number of applications sent (Neumark, 2016). Also, Neumark (2016) advises to still insert the whole set of responses, even if both receive no replies, in order for the interpretation of the discrimination to be more realistic. For example, if the total number of observation is 100 and that 97 of them is a no-reply case while 2 are a positive response for the white candidate and 1 for the black candidate, not accounting for the no-reply cases will dramatically affect the interpretation of the result (the call-back rate will be different).

Now we present the various advantages of correspondence studies. **(1)** A first advantage of correspondence studies is that it enables to find a causal link (Baert & Omey, 2015). Indeed, once we find that discrimination occurs against a particular group, it can only be that group belonging explains discrimination and not the other way around. This is the case because we control for the group belonging and then we observe discrimination. **(2)** A second advantage is that every information gathered during the experiment is objectively recorded since everything is written and fully controlled by the researcher (Riach & Rich, 2002). **(3)** Thirdly, this type of test requires relatively little resources to obtain a large sample of observations (Neumark, 2016). Indeed, an internet connection and an email address is sufficient to manage the data gathering. However, the size of the observed sample will also depend on the type of job that is studied and on the economic situation. **(4)** Fourth, the order in which CVs are posted is randomized. This allows avoiding omitted variable bias in the measure of the discrimination that can be caused by other factors influencing employers when they select applicants. For example, employers might choose one fictive CV over another simply because of the presence of a CV from a real applicant that was sent in-between. Also, some employers might choose one candidate on information that was not supposed to be determinant between the two fictive resumes. For example, this situation can happen if two applicants did not go to the exact same school although having the same diploma and the school having the same reputation. Indeed, if the employer went to the same school as one of them, it might make him choose him instead of the other. As a result, this observation would not show discrimination against the targeted characteristic (race, gender, etc.) Thus randomization of the application order avoids those types of observations to bias the total results. **(5)** Fifth, correspondence studies allow the researchers to measure potential factors of discrimination by varying more than one candidate's characteristic between paired CVs. For example, Valfort (2015) studies discrimination against religion and creates

give almost identical resumes, but they act in such a way that they can have the same gestures, the same looks, the same accents, etc. Interviewees can be signaling their group belonging through physical appearance (size or weight for some ethnicities, skin for some race), through accent, name, etc. At the end of the interview, the fake job-seeker is either accepted or refused (Neumark, 2016; Riach & Rich, 2002; Charles and Guryan, 2013).

[11] This is measured by a subtraction of the case where one candidate is the only one accepted with the case where the other candidate is the only one accepted and the result is set in absolute value. This result is then divided by the total number of applications pairs for which the answer was positive for at least one candidate.

many different types of CVs varying in multiple characteristics (man and woman, Jewish, Muslim, and Catholic, practicing or not, "exceptional or not"[12]). This allows measuring the marginal effect of each differing variable on discrimination and to refine the interpretation (Charles and Guryan, 2013). **(6)** Sixth, correspondence tests respond partially to the Heckman and Siegelman's critique made on audit studies[13]. As a matter of fact, since all the information that is sent to the employer is controllable by the researcher, all variables other than the one that allows the study of discrimination should be matching between two different candidates. However, as Heckman and Siegelman explain, we cannot be certain that all the characteristics that are relevant for the employer are put on the CV and, consequently, they must be carefully chosen and justified by the researchers for each study (Riach & Rich, 2002).

Despite those several advantages, there exists some drawbacks to correspondence tests. **(1)** In addition to the fact that many job offers are unavailable to research because they are transmitted by word of mouth, this kind of study generally limits itself to low-skills jobs, mainly because it is less demanding to researchers in terms of time investment (Neumark, 2016). Indeed, low-skill job offers are using email to send an application, they are more easily available on the internet and employers would be less likely to research more information about the applicant for low-skill jobs compared to other types of job offers (Neumark, 2016). **(2)** Another big issue is the job-relevance of the information on the resume. The CV content might be important for the employer. Thus, many characteristics (such as race, religion, sexual orientation, etc.) might not be expected to be written. Also, the use of variables such as the names, extra-curricular activities, place of birth, etc. might bring some additional and unintended information to the employer and, as a result, it would bias the results of the correspondence test. For example, when we study the discrimination against black job seekers, the use of names that are from typical black origins will not only signal race but might also signal the socio-economic background. Indeed, Fryer and Levitt (2004) showed that most of the American black families that use typical black names are those from poor economic background (Charles and Guryan, 2013). **(3)** Correspondence tests do not facilitate the identification of the type of discrimination. Indeed, in economics, there exists two types of discrimination: one based on taste[14], one based on the belief about worker's productivity[15] (i.e.: statistical discrimination model). In correspondence tests, statistical-based discrimination can only be detected by measuring the difference in result between a case where CVs contains a lot of information and a case where it does not contain a lot of information. Statistical-based discrimination is detected if the discrimination level has decreased when new information was made available to the employer. However, with a low the level of information, we risk to omit important characteristics for the employer and our results could become biased. Thus, there is a risk of bias when comparing two level of information to identify the type of discrimination (Neumark, 2016). **(4)** The measure of discrimination might be more relevant in audit studies since they calculate the discrimination one step further (interview stage) than the correspondence studies. However, results from set of audit tests made by Bovenkerk (1992) for the International Labor Organization showed that about 90% of the discrimination comes from the stage before the interviews. This was reinforced by the results of Neumark et al (1996) that showed little differences in the results of discrimination between

[12] "Exceptional" candidates are those who have better skills in terms of experience and education.

[13] An issue about audit studies that has been raised by Heckman and Siegelman (1993) is that it is impossible that two candidates match in every dimensions except the one we want to study because there are too many dimensions to account for (i.e.: there are always potentially important characteristics that are different between the two individuals). If only some specific characteristics match, we cannot be sure that non-matched characteristics are not the ones that cause discrimination instead of the variable we wanted to study (Riach & Rich, 2002). Also, the same authors argue that audit studies rely on the hypothesis that "the distributions of unobserved (by the testers) productivity characteristics of majority and minority workers are identical" (p. 223, Heckman & Siegelman, 1993). They also argue that audit studies could have the tendency to overestimate discrimination because of the significant influence of unobserved variable. Indeed, if an important variable of decision for the employer has been omitted in the matching, the results might show too many cases of discrimination, if we follow the reasoning developed above.

[14] According to Becker (1957), discrimination occurs when an employer treats differently two workers belonging to different groups although knowing they have the same productivity (Cahuc & Zylberberg, 2004). This is the so-called taste-based discrimination because it reflects a "taste" or "distaste" for a specific group. For more detail see definitions in Annexes.

[15] In this model, employers discriminate because they possess only part of the information about the workers' productivity such as the one available on their resume or results from hiring tests. Although it may give an idea about the job seekers' productivity, it might not be enough for the employer to choose between two candidates. In order to complete this information, employers can use the beliefs or the information they have about the average productivity of a given social group and discriminate according to that.

the interview stage and the first stage of the hiring process.

Some correspondence studies have measured discrimination against religious[16] and ethnic groups[17]. Indeed, those experiments are the only one approaching the concept of culture. However, some work is needed to prove the causal link between those groups with values and beliefs in order to talk about culture. To give an example, Adida, Laitin and Valfort (2010) try to see whether immigrants are discriminated against because they are Muslims compared to Christians. They perform a correspondence test where three candidates are the same except for the religion which is signaled by the use of names, past work, and extra-curricular activities. For example, female candidates were coming from Senegal but one was named Marie, which is typically a Christian name, another one was named Khadija, which is typically Muslim, and a third one was called Aurélie, which is not supposed to be related to any religion. Another way to signal was the past work which was either Secours Islamique (Muslim institution), Secours Catholique (Christian) or secular firms (laic). Finally, Marie was a volunteer for the Catholic Scouts and Khadija volunteer for the Muslim Scouts. They find that Muslims are 2.5 times less likely to obtain an interview than the Christian candidates.

3. The Belgian context

We will now learn some context about Wallonia and Flanders, two regions of Belgium, and their inhabitants, Flemings and Walloons. We will see that they differ in many ways including historical, economic, political background. Moreover, all those oppositions between Walloons and Flemings make us think that they might differ culturally, at least linguistically speaking.

To begin with, separating itself from the Northern part of the Low Countries (current Netherlands), Belgium was born in 1830 and its creation can be explained by two important factors. First, French was the language of the elite (such as Liberals) in Southern Netherlands contrarily to the Northern part where Dutch (mostly dialects) was the main language. Second, the majority of Southern Netherlands was catholic while Northern Netherlands was protestant, including the King, William I. Thus, Catholics and Liberals fought for independence as result of their differences with Northern Netherlands and Belgium was quickly created with the support of England, France, and Prussia[18]. However, Belgium was also composed of groups which differed in terms of language. According to Van Durme (2002), linguistically speaking, current Belgium was split in half by the Romance-Germanic language border since at least the beginning of the Middle-Age (see Figure I in Annexes). For Steinbach (1926), it then led to a deeper separation between Romance and Germanic culture. In 1830, the majority of the population was speaking many sorts of dialects: all sorts of Flemish dialects (derived from Dutch) in the North, German dialects on the border with Germany and Luxembourg, and Roman dialects (Walloon, Picard, Lorrain) in the South (Rillaerts, 2010). Still, in the objective of creating a form of unity among the different parts of the country, French was proclaimed as the official language for institutions and education. Quickly, as a reaction to the French domination as the official language of the country, Flemish movement was born in 1830. Since its beginning, the goal of this movement has been to fight for cultural and linguistic rights for the Flemish part of Belgium. In 1889, Flemish was recognized as an official language[19]. In 1963, the administrative linguistic frontier was born as a separation between the French Community (including Wallonia) and the Flemish Community (including Flanders) while Brussels, being a bilingual city, remained part of both communities. This frontier guarantees unilingualism in each community and autonomous cultural institutions[20].

However, this separation is not only due to linguistic issues but also to social, economic and political ones (Wyllemins, 2002). First, economic conditions have been different in both regions. Wallonia was an early industrial power with its mines of coal, and glass, steel and chemistrial industries while Flanders remained mostly rural and axed on agriculture at first. After the half of the XXst century, the economic differences in the country reversed themselves and Flanders became more and more prosperous. By the 60s, its GDP was above the one of Wallonia (Mnookin & Verbeke, 2009). Indeed, contrarily to Flanders, Walloon industries were becoming old and no important investment was made in new industrial sectors (Jamart, 2008). Socially speaking, the early presence of different social classes in both parts of the country was a cause of birth of the Flemish Movement. Wallonia was mostly

[16] For example, see Adida, Laitin and Valfort (2010), Weichselbaumer (2015), and Valfort (2015).

[17] For example, see Riach and Rich (2002), Rich (2014), and Zschirnt and Ruedin (2016).

[18] For more detail, see http://www.belgium.be/en/about_belgium/country/history/belgium_from_1830.

[19] With the so-called "Law of Equality", see Wyllemins (2002).

[20] For a more detailed explanation of the conflict in the creation of Belgium, see Rillaerts (2010), Mnookin & Verbeke (2009), and Wyllemins (2002).

composed of miners and industrial workers while Flanders was mostly made up by farmers (Kesteloot, 1993). Here are some examples of moments illustrating the growing separation between Flemish and Walloons: **(1)** in August 1912, the Walloon politician Jules Destrée wrote a letter to King Albert I claiming that there is no such thing as Belgian but only Flemings and Walloons (Farhat, 2012). **(2)** In 1950, the « Question Royale » showed the divergence between 58% of Wallonia voting against the return of the King after WWII while 72.2% of Flanders voted for its return. **(3)** In 1968, Walloon students were expulsed from the University of Louvain (known as the "Wallen buiten" event meaning "Walloons out") (Jamart, 2008). **(4)** Today, we can speak of segregation when talking about Walloons and Flemings. Indeed, more than 85% of the population of each community (German, Flemish, and French Communities) speaks the same language as a mother tongue (Blondel et al, 2008). Also, as Mnookin and Verbeke (2009) explain, only a small number of the French and Flemish community crosses the language border to work[21]. **(5)** Finally, many Flemings identify strongly more as being Flemish than Belgian (31.3% of the population in 2003) while it was not the case for Walloons (only 8.3% identifies as being more Walloon than Belgian) (Billiet et al, ISOP, 2006). Politically, De Smaele (2011) explains that voting preferences remained fairly the same in both Wallonia and Flanders through time although the large economic reversion (see above). Walloons mostly vote for the left-wing parties and Flemings for the right-wing parties. His explanation is that part of the Flemish people voted and still vote for those right-wing parties to "express a Flemish pride (…) in its stubborn resistance against (…) French-speaking elites in Brussels" (p.10). Jamin (2011) supports that right-wing politics in Flanders use a producerist[22] approach promoting the Flemish culture and that it led to the political divergences between both parts of Belgium.

As a result of these various changes around the mid-19th century, stereotypes concerning Flemings and Walloons have changed. Before 1950, a Flemish was seen as being poor, rural peasant and catholic[23] while a Walloon was seen as rich, industrialized and laic (Jamart, 2008). Currently, a Flemish is seen as a hard-worker and more disciplined but still more catholic while a Walloon would enjoy more life due to his Latin blood (Aernoudt, 2006) but complains more about his work, going more often on strike than his Flemish counterpart[24]. The rate of unemployment in Wallonia being close to double from the one in Flanders[25] and part of the social security contributions being transferred from Wallonia to Flanders, it is not surprising that Flemings see Walloons as profiteers and lazy (Mnookin & Verbeke, 2009).

4. The Field Experiment

We conduct a correspondence test on hiring discrimination based on culture in Belgium where fictional job requests are sent to authentic job proposals. As explained earlier, applications are sent in a random way, and the design of correspondence studies enable to find the cause of the discrimination. Also, because all applicants are the same in every characteristic but the ones identifying their group (Flemish and Walloons), the reason of the discrimination can only be due to this belonging to a group.

Specifically, from November 2014 to November 2015, in a collaboration between Ghent University and UCL, we organized a correspondence test in the labor market from two provinces of each Belgian region (Oost-Vlaanderen and Limburg for Flanders and Liège and Hainaut for Wallonia). Also, the chosen localities where we sent the applications were close to the linguistic border[26] so that candidates lived

[21] It would represent less than 1% of commuting according to those authors if we do not include Brussels. However, according to Dejemeppe and Van der Linden (2013), 4% of the Walloon workers commuted to work in Flanders in 2009, if we do not take Brussels (which includes 12% of the Walloon labor force).

[22] The producerist approach is born in the United States and "suggests the existence of a noble and hardworking middle class that is constantly in conflict with malicious parasites which are lazy and guilty, and found both at the top and the bottom of the social order" (p.27, Jamin, 2011). In the NVA (Flemish Nationalist Party) discourse Walloons are seen as the "parasites", according to Jamin.

[23] Belgium has been divided since its creation until recently between the Socialist Party in Wallonia and the Catholic Party in Flanders. Wallonia was becoming more and more laic and socialists ignored the linguistic rights claimed by the Flemish Movement. The Catholic Party decided to team up with the Flemish movement which, in turn, helped him to remain strong in Flanders.

[24] This is somehow confirmed by the statistics: according to the UWE (Union Wallone des Entreprises), the ratio of days worked over days on strike is almost constantly higher in Wallonia than in Flanders. For more details, see <http://www.uwe.be/social-emploi-formation/emploi/dernieres-infos-sur-ce-theme/statistiques-de-greve-par-rapport-aux-jours-prestes/>. However, as Vandaele (2010) explains, it is hard to conclude anything from the statistics about strikes in Belgium, many dynamics being at play.

[25] In 2015, unemployment rate in Flanders was at 5.2% while it was 11.9% for Wallonia (Eurostat, 2016).

[26] See Annexes for a detailed map of the municipalities.

at similar distance from work[27]. We did not send application to municipalities with facilities of language because there were no clear differences between Walloons and Flemings. In each region where we sent the applications there were one candidate from Flanders and one from Wallonia. Thus, in total, there were four candidates who differed in four characteristics supposed to identify the cultural belonging: the origin of their names (French or Flemish-sounding), their place of birth, of living, and of education (Flanders or Wallonia)[28]. In total, applications were sent to 538 job offers with 285 in Wallonia and 253 in Flanders. We found those vacancies in the public job platform from each regions (*Le Forem* in Wallonia and *VDAB* in Flanders).

Construction of Fictitious Applications

Two different templates of CVs and motivation letters[29] (A and B) were made for each job offer in order to avoid giving hints of the conduct of an experiment to the employers which could bias our results. The motivation letter consisted of an email and, as for the CVs, there were two types of motivation letter which slightly differed in the template shape in order to avoid detection of the experiment from employers. Compared to type A, type B included the name of the student job performed by the candidate and, also, it was proposed to answer to further questions concerning the candidate in a job interview with the recruiter. The form of both CV templates followed examples given by the VDAB but remained very similar to the one proposed by Le Forem[30]. The only two differences between the two CV templates were the student job experiences of the candidates and their hobbies. In template "A", the candidate worked as a student in a supermarket of the region of living. In template "B", he worked in a bakery. Also, in model A, the applicant was fond of football while it was basketball for model B.

In both types of CVs, the applicants were male who were born in Belgium in 1996, they had their car driving license, they got a professional secondary school diploma in "seller" option since June 2014. The place of school depended on the place of living of the individuals but all schools were comparable and had a similar reputation. Also, in both templates, the candidates could use Microsoft Office Suite, and they could speak French and Dutch, the linguistic level being unmentioned in order to show the same level in both languages[31].

In order to signal the candidates' cultural belonging, several characteristics were different between the Flemish and the Walloon candidate. First, the names and surnames were different. For the Flemish part of the experiment, Jeroen De Coninck was the Flemish candidate and Fabrice Lejeune was the Walloon candidate. For the Walloon part of the experiment, Pieter Lombaerts was the Flemish applicant and Thomas Boussart was the Walloon applicant. Three other differences were the place of school, the place of birth, and the place of living which were in Wallonia for the Walloon candidate and in Flanders for the Flemish candidate. Moreover, these places of living were fictitious, the number of the address being inexistent. As a result, it was impossible to measure the potential answers by posted mails from the employers. But, as it is argued by Baert and Omey (2014), answers by mail are not an ordinary means for employers.

Sending and Reception Process

The CVs were only sent to job openings which were situated in the provinces of study and at similar distances from the place of living of both applicants (in terms of minutes and of kilometers). Thus, it had to be close enough to the linguistic frontier (we made a correspondence table with the localities which fulfilled this criterion in table A, see Annexes). This is important to take similar distances for both candidates in order for this variable not to be a factor of discrimination to employers. In order to take distance into account in our database, we created a dummy variable which was equal to 1 if the distance was less than 30km or less than 30 minutes for both candidates and equal to 0 otherwise. Also, since all of our candidates were graduated with a diploma of seller from professional secondary school, these offers had to be looking for applicants with this diploma or without any specific diploma. Concretely, most of the job offers for which we applied were either for home help or seller positions. In addition, so as not to be detected by the employers, the application process could not be done more than one time towards the same employer. Finally, the job offers in which it was indicated that the knowledge of French or Flemish language had to be perfect were discarded from the application process. The reason is that, for example, Flemish candidates are more likely than Walloon candidates to be preferred for a job where it is asked to speak Dutch perfectly since it is their mother tongue. Also, offers asking for more than two years of job experience were also abandoned

[27] See below for an explanation.

[28] See later in the text for more details.

[29] See Annexes.

[30] See <https://www.leforem.be/MungoBlobs/28/229/ExemplesCV.pdf>.

[31] See the CV's in Annexes.

because our candidates did not have any experience and thus it seemed unlikely that they would be accepted for those positions.

An alternation was constructed in the sending process. When sending the applications to the first job offer, if the Flemish candidate had the model A, the Walloon candidate had the model B. Also, this was reversed for the next job offer and the model B would be for the Flemish while the model A would be for the Walloon. This alternation was done to avoid any influence of the shape of the application template[32] on the employer choice and it allowed randomization of the process. Also, for both regions, each candidate's application was sent with approximately 24 to 36 hours between them in order not to be too close in time to each other and risking to be caught by employers and not to be too far apart in time neither and risking to favor systematically the first candidate to the eyes of the employers.

Both Walloon and Flemish candidates had a personal email address and a phone number for the experiment. The applications were sent by email and answers were received either by email or by voicemail. Positive answers were quickly turned back and tardive callback by the employers were discarded. In the same way as Baert and Omey (2014), we used two definitions of positive callbacks. First, *sensu stricto* (strict sense), a callback is said to be positive only if the answer from the employer is positive. Second, *sensu lato* (large sense), a callback is also positive if the employer proposes another job or ask for more information. In order to better grasp the discrimination phenomenon, we accounted for many dimensions in the job offers. We kept the information concerning gender of the employer when available, the type of contract (part-time or full-time), the length of contract (temporary or indeterminate length), the applications managed by interim office or not, the presence of teamwork or not, the mention of language abilities (if other than perfect), and the indication of customer contact or not in the job offer.

5. Results

The results of the data gathering are displayed in tables 1 and 2 for Wallonia and in tables 3 and 4 for Flanders[33]. Taking all observations, in Wallonia, only 9 (24) of the employers' responses were positive in the strict (large) sense[34] out of 285 job offers for which we applied. Only in 5 (18) cases did we receive a positive call-back for both candidates and the 4 (6) positive call-backs left were only for the Flemish candidate. Thus we had no positive reply that concerned only the Walloon candidate. In Flanders, out of 253 job offers for which we applied, 50 (86) gave a positive call-back in the strict (large) sense. 29 (50) of them were received for both candidates, 15 (26) invitations were given only to the Flemish candidate, and 6 (10) to the Walloon candidate only.

In the Walloon part of the experiment, the net discrimination rate (NDR) is the subtraction of the positive answers received by the Walloon only by the one received by the Flemish only, the whole result divided by the total number of applications pairs for which the answer was positive for at least one candidate. This measures the net number of discrimination that is encountered by a minority (which are the Flemish candidates in Wallonia and the Walloon candidates in Flanders). A minus sign means that Walloons candidates are discriminated against compared to Flemish candidates, a positive sign would mean the opposite. Taking this result for all observations in Wallonia, the NDR is of -0.44 (-0.25) sensu stricto (lato), both being significant at the 5% level. Thus, the null-hypothesis of the chi-square test is rejected and both candidates are not treated unfavorably in the same way (i.e. the Walloon candidate is disadvantaged compared to the Flemish candidate). In the Flemish part of the experiment, the NDR is the subtraction of the positive answers received by the Flemish only by the one received by the Walloon only, this subtraction being divided by the total number of applications pairs for which the answer was positive for at least one candidate. In this case, the interpretation is the opposite of the precedent one: a positive sign means that Walloon candidates are discriminated against compared to Flemish candidates. Taking the results for all observations in Flanders, the NDR is of 0.18 (0.19) at the 5% (1%) level of significance.

As it is explained by Baert and Omey (2014), another measure of the discrimination is the positive call-back ratio (PCR). In Wallonia, this is a division of the percentage of positive call-backs for the Walloon candidate by the similar percentage but for the Flemish candidate. The PCR for all observations in Wallonia is of 0.56 (0.75) at the 5% level of significance for the strict (large) sense. This result shows that Walloon candidates receives 44% (25%) less positive answers from employers than Flemish candidates in the strict (large) sense. In Flanders, however, the PCR is the percentage of positive call-backs for the Flemish candidate by the similar percentage but for the Walloon candidate. The PCR is of 1.26 (1.27) sensu stricto (lato) at the 5% (1%) level of significance. This means that the Flemish candidates receive 26% (27%) more positive call-backs than the Walloon candidates in Flanders and that the Walloon candidates receive 20.6% (21%) less

[32] See the CV's in Annexes.

[33] See Tables in Annexes.

[34] See last § of point 3.

positive call-backs than the Flemish candidates in the strict sense[35].

In conclusion, Walloon candidates are discriminated against in both Wallonia and Flanders at a significant level and this is the case for both the probability of being invited to an interview (sensu stricto) and receiving any positive reply (sensu lato). According to the minimal group paradigm (Tajfel, 1978), anyone discriminates against someone else if they belong to two different groups. Consequently, the fact that Flemish employers discriminate against Walloon employers is in concordance with this paradigm. However, it is against our results in Wallonia since people of the same group discriminate against each other. As we will develop in the further discussion (point 5), medias could lead Walloon employers to discriminate through the transmission of stereotypes against Walloon workers.

In order to complete our analysis, we also measured discrimination given several dummy variables. All results are available in tables 1 to 4. In Wallonia, some results seem interesting to cite. First, the NDR in Hainaut is of -0.50 (-0.25) sensu stricto (lato) at the 10% (5%) level of significance. Thus Walloons are discriminated against in Hainaut. However, the NDR for Liège is not significant and is of -0.33 (-0.25) sensu stricto (lato), thus, we cannot conclude that there is an unequal treatment in Liège region. Finally, in the large sense, there seems to be more discrimination against Walloon candidates in indeterminate job contract offers, in offers not managed by interim offices, in job where ability in the other language is not required, and in jobs where there is no teamwork, all of the respective NDR for those dimensions being significantly negative in table 2 (see tables 1 and 2 for more details).

In Flanders, while discrimination sensu lato in Limburg and in Oost-Vlaanderen seems to be about the same magnitude (NDR is respectively equal to 0.23 and 0.16 sensu lato) and their measures being significant for both provinces at the 10% level, the results are less clear when we take the strict sense since discrimination is significant only in Oost-Vlaanderen (NDR equals 0.21 at the 10% level of significance). Another finding is the fact that female recruiters seems clearly to be discriminative against Walloon candidates, their NDR being of 0.25 (0.25) at the 5% (1%) level sensu stricto (lato). We cannot say anything concerning male recruiters since the results are not significant. Finally, sensu lato, we find discrimination in the indeterminate contracts (1% level of significance), in the part-time job offers (5% level), in the jobs not proposed by interim offices (5%), in the offers without need for language ability (1%), in both job offers with (5%) and without (10%) customer contact mentioned, and in job propositions without teamwork (5%) (see tables 3 and 4 for more details).

However, while we could have checked this using regressions of the discrimination on the various dimensions from the two previous paragraph, due to the low number of observations both in Wallonia and in Flanders, we cannot conclude anything concerning the heterogeneity effect of each one of these several dimensions.

6. Discussion

6.1. Limitations

Our experiment presents several issues that can alter the interpretation. First, the above results cannot be generalized to the whole Belgian labor market since we restricted our study to some localities on the border of the linguistic frontier and to specific jobs requiring low-skill and no experience. Also, we only took job offers from the public job offer databases (VDAB and Le Forem) while many job offers can be found using other channels such as hand-to-mouth, newspapers, other employment website, and official firm websites. However, in regard to that, our results are still interesting to show that discrimination is present and maybe at a larger scale than the one we observed.

A second issue is the number of positive call-backs. Indeed, while we have found significant results, the number of positive call-back in Wallonia is very low compared to the one in Flanders. This might be due to the different quality of labor market in both regions[36] but it might also be due to the CV and motivation letter types which were made according to Flemish templates given by the VDAB. However, as already explained, the form of the CVs remains fairly classic.

A third issue is the difference between both regions in the time necessary to obtain the same number of observations. It took longer to find the same number of observations in Wallonia than in Flanders. In Flanders, the data gathering started in November 2014 and ended in April 2015 for both regions. However, in Wallonia, it started in November 2014 too but it ended in June 2015 for Liège and in November 2015 for Hainaut. This might be another evidence of the difference in quality of the job market. However, it can also be due to the fact that Le Forem is less utilized by job seekers in Wallonia for the type of jobs that we were looking for than the VDAB in Flanders.

[35] 20.6% is calculated as follows: 1 – 1/1.26 = 0.206. This is similar for the other result in the large sense (21%).

[36] See the unemployment levels at footnote 25, for example.

Fourth, as we have seen earlier, the use of correspondence tests only measures discrimination in the first stage of the hiring process and, thus, we cannot say that discrimination will occur when hiring the applicants. However, as explained above, it has been show that discrimination at first stage is a good estimator of the discrimination at the second stage (Bovenkerk, 1992). Indeed, recruiters will be more likely to give an interview to candidates with a bigger probability to get hired (Baert & Omey, 2014).

Fifth, we chose to show the cultural belonging with the use of the place of birth, of education, of living, and with the name of the candidate. A first issue is encountered with the choice of school place, even though schools were of similar reputation. Indeed, secondary education with an option in selling can be seen as being of a different quality in Wallonia compared to Flanders. As a matter of fact, PISA tests[37], which are commented by the medias[38] and thus available to employers, show that Flemish students get better test scores than Walloon students[39]. If this is the case, employers might choose more often Flemish students because they will be more performant due to their higher education. Yet, this is unlikely since many of the positive call-back were for both candidates and employers posting the type of jobs for which they applied were unlikely to look at the education level (seller, home help). Another problematic characteristic is the name of the Walloon candidate which could be associated to the Walloon culture but also to the French-speaker culture[40]. Indeed, "Thomas Boussart" or "Fabrice Lejeune" are typical French-sounding names. As a result, it is hard to know if the discrimination is made against French-speakers or against Walloons. In order to deal with that we could have made additional candidates with French-sounding names from France (for example from Nord-Pas-de-Calais) or German-sounding names from the Eastern Counties in Wallonia, in the same way as Valfort (2015). This could have helped us to measure the difference between French-speaking and Walloon people.

Yet, the fact that Belgian French-speaker and Walloon belonging are not differentiated in the candidate's names might not be an issue for at least two reasons. **(1)** We can assume that Belgian French-speakers and Walloons are approximately the same group in terms of culture and that culture is the cause of discrimination. Indeed, mass medias (Cortes, 1995) and the education system (White & Kite, 2010), which are important channels for the development of a shared culture, are the same in Wallonia and in Brussels for all the French-speakers. **(2)** For the Flemish part of the experiment, the existence of an amalgam between Walloons and French speakers might show that they do not differ to the eyes of the employer. Here are some examples from known Flemish scientific researchers: **(a)** in their article, Mnookin and Verbeke (2009) tell the reader that there is a "persistent conflict between the French-speaking Walloons and the Dutch-speaking Flemish" (p.151). Also, they sometimes speak of the conflict between "Francophones" and Flemings and sometimes between Walloons and Flemings. Finally, for those two authors, "for centuries, French was the language spoken in most of the southern provinces[41] (i.e. Wallonia), while in the Flemish provinces in the north, the people spoke various Dutch-German dialects, except for a small bourgeois elite who also spoke French" (p.156). **(b)** De Smaele (2011) analyzes the political divergences between Flemish and Walloons and, already in the very beginning of his argumentation, he says "(…) the electoral and cultural split between the French and Dutch-speaking parts of Belgium since the middle of the nineteenth century (…)" (p.6). **(c)** Billiet et al (2006) study the differences in the political cultures of Walloons and Flemings. When talking about the identity of both

[37] PISA (Program for International Student Assessment) is a survey which measures educational performance among 65 countries using standardized tests for students of 15 years old in mathematics, reading, and sciences. More than 510 000 students took part in the program of 2012 (for more information, see <http://www.oecd.org/pisa/aboutpisa/>).

[38] For example, see Burgraff (2014) or La Libre: <http://www.lalibre.be/actu/belgique/enseignement-la-communaute-francaise-loin-derriere-la-flandre-pisa-529daa7f35708eb0ea992b66>.

[39] According to PISA results (2012), French Community is below the OCDE average for all branches (mathematics, reading, sciences) while the Flemish Community is above this average for all branches. The distance in terms of year of study would be close to one year between the two communities for students aged of 15 years old (Burgraff, 2014). However, it seems that it is mainly due to socio-economic inequalities between schools of the French Community (thus culture would not be a major explanatory variable for this result).

[40] The size of the Belgian French-speakers is considerably bigger than the size of the Walloons. As a matter of fact, according to Lambert and Lohlé-Tart (2010), Brussels is composed of 66.5% of Belgian French-speakers, 5.3% of Flemish-speakers, and 28.1% of other languages (all sorts of languages from foreign countries). Janssens (2008) measures the language that is spoken at home in Brussels and finds that 56.8% of the population uses French. Thus, in terms of numbers, Belgian French-speakers are approximately 4,2 million while Walloons are approximately 3.56 million including 99% of French-speakers (Leclerc, 2015).

[41] This is incorrect since French was only spoken by the elites both in Wallonia and in Flanders, as we explained in section 2.

groups, he uses "French-speaking" when talking about the Walloons (see p.915, §2). Indeed, they also measure different values to show the difference of culture between "Francophones" and Flemings although the aim of their paper is directed towards Walloons, not French-speakers. What could be the reason for this confusion in those three examples? Firstly, as explained earlier, the Belgian conflict was linguistic (against French speakers) before being politic (against Walloons) and it might have created this amalgam. While Flemings fought to obtain linguistic rights against the French language, Walloons accepted it without any resistance[42]. Also, Flemings were dominated by the French language and by the economic strength of Wallonia. Secondly, the Flemish Community, which deals with the culture and the Flemish language, is currently merged with the Flemish Region which deals with the economic affairs of Flanders. Thus, it can be seen as non-dissociation between linguistic and economic matters by the Flemish. Consequently, it might push Flemings to mix French-speakers (who live in the French Community, including Brussels) and Walloons (who live in the Walloon Region). Thirdly, the French Community is separated from the Walloon Region but Walloon parties are included in the French Community along with the ones from Brussels. This might also create confusion between French speakers and Walloons. If the above amalgam is revealed to exist in the eyes of the majority of the population, using French-speakers or Walloons in our correspondence test should not change our results.

Sixth, as we have explained in part 3 of this work, we put the same level of language for both candidates in Dutch and in French. However, employers can doubt about the real capacity of the Walloon candidate to speak Dutch compared to his Flemish counterpart to speak French. Indeed, according to Ginsburgh and Weber (2006), while 57% of the Flemings are bilingual Dutch-French, it is only the case for 17% of the Walloons. Thus our results could have been affected by this belief from employers that it is less likely for the Walloon candidate to speak both languages. Employers would have preferred to hire the Flemish candidate. To know if this effect had an important impact on our results, it would have been interesting to give a questionnaire to employers after the experiment in which questions could have allowed to understand better their decision process when they are confronted to this case of bilingualism.

6.2. Using culture to explain discrimination

All the above limitations concern the design of the experiment. Using a correspondence study, we were able to show that employers (from Flanders and from Wallonia) discriminated against job-seekers if they were Walloon. Thus, the belonging to Walloon or Flemish group explains discrimination. Yet, this does not prove that culture explains discrimination. In what follows, we discuss two channels by which it is possible to show this last relation.

(1) In the first channel, culture can be transmitted through medias and there is no need for Walloons and Flemings to be different culturally speaking. Only the fact that Walloons and Flemings are seen as being different groups leads to the creation of stereotypes and then to discriminatory behavior. In their book, *The Psychology of Prejudice and Discrimination*, Whitley and Kite (2010) uses the following definition of culture: it is "a unique meaning and information system, shared by a group and transmitted across generations (…)" (p.12, Juang & Masumoto, 2016). This definition is close from the one seen in section 1.1. Also, for White and Kite (2010), culture is undeniably at the basis of stereotypes and prejudices which lead to discrimination. As a result, discrimination against Walloons is caused, at least partly, by culture. Those authors differentiate stereotypes from prejudices because those two notions explain discrimination in two different ways. A stereotype is a belief or an opinion about a group that is used by individuals in order to deal with the complexity of their environment. Due to the great amount of information around them, individuals must select which information is pertinent to remember in order to obtain a more efficient thought process. Thus, they have the tendency to generalize the information received about one person to all the members of his social group. According to White and Kite, "people learn stereotypes from the media, peers, parents, and even sources such as classic and modern literature" (p.9). However, a prejudice is an individual's emotional reaction (disgust, discomfort, anxiety) which occurs when they are in contact with someone from a specific social group which is different from theirs (Brewer & Brown, 1998). Prejudices can come from stereotypes, from real or perceived threat, from the individual's personality, or the specific context. For example, some people might feel anxious towards disabled persons because of stereotypes.

In Belgium, mass medias often send negative stereotypes concerning Walloon workers to employers. For example, popular Flemish newspapers explain how Walloons are less willing to work or go more often on strike (Corthouts, 2008; Delepeleire, 2011; Rasking, 2006). In Wallonia too,

[42] The so-called Walloon Movement did not fight for the rights of the Walloon language but for the rights of Walloons in opposition to the Flemish Movement. In fact, the Walloon Movement fought for the French language and was opposed to the linguistic rights of the Flemings (Kesteloot, 1993).

medias often talk of Walloons along with the word strike or unemployment. For example, in La Libre Belgique, which is read by about 230 000 readers[43], approximately 10% of the articles associates those words with Walloons[44].

(2) Culture can also be transmitted by parents and older generations. The idea is that different cultures lead to different values and beliefs and thus it can push employers to discriminate. In order to show that Flemings and Walloons are different culturally speaking, let's go back to the definition of culture: it is the set of "customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation" (Guiso et al, 2006, p.2). As it was explained in footnote 1, an ethnic group is a "group of people who share several characteristics based on civilization: religion, language, culture or other characteristics". Moreover, according to Peoples and Bailey (2012),"an ethnic group is a named social category of people based on perceptions of shared social experience or ancestry. Members of the ethnic group see themselves as sharing cultural traditions and history that distinguish them from other groups. Ethnic group identity has a strong psychological or emotional component that divides the people of the world into opposing categories of "us" and "them." (…)" (p.389). For Peoples and Bailey (2012, p.406), Walloons and Flemings are different ethnic and cultural groups. Using the two above definitions of ethnic group, we are going to show some examples which indicates that Flemish and Walloons are distinctive ethnically speaking. Then, we will give statistics which suggest that Flemish and Walloons differ in some beliefs and values. However, we only provide correlation and we were unable to find a causal link between ethnic belonging and values and beliefs. As a result, we can only assume that both groups have a particular culture.

Ethnic differences

First, an ethnic group can share common language. As explained before, the majority of Flemings speaks Dutch and the majority of Walloons speaks French. Moreover, in their work on the measure of mobile phone communications to identify linguistic groups, Blondel et al (2008) show that those two groups do not communicate importantly with each other[45]. However, a small minority of the population in Flanders are French-speakers[46] and a small minority of the population in Wallonia are German-speakers[47]. But, since those two minorities remain very small, it should not affect our argument that Flemings and Walloons have their own common language. As a matter of fact, no mass media is bilingual in Belgium. It is either in French for Wallonia or in Dutch for Flanders.

Second, according to Peoples and Bailey (2012), an ethnic group can share "a wide variety of cultural traits, clothing, house types, personal adornment, food, technology, economic activities, or general lifestyle" (p.391). For example, common family structure is one trait for which Walloons and Flemish differ. In his book, Todd (1990) classified European regions according to their historical family structures. Studying them from the Middle-Age until nowadays, he was able to define several types of family according to two dimensions. First, the relation between parents and children is either liberal or authoritarian (taken as extreme cases). For example, in the liberal family type, children leave the "nest" as soon as they are adults and gain independency from their parents. In the authoritarian type, children stay close to their parents and remain dependent a long time after adulthood. The second dimension is the relation among siblings who are either equal or unequal, one child being advantaged. According to Todd's dimensions, the border between equality and inequality among siblings "closely approximates the historical border between French and Flemish-speaking (or, for that sake, between Latin and German-speaking) populations that dates back to Roman times" (p.30, Duranton et al, 2009). The ancestors of the Northern part of Belgium (current Flanders) would have been incomplete stem families and those of the Southern part of Belgium (current Wallonia) would have been egalitarian nuclear families. Thus, in families which lived in the future

[43] See La presse francophone gagne des lecteurs. La Libre, 25/03/2015, <http://www.lalibre.be/economie/libre-entreprise/la-presse-francophone-gagne-des-lecteurs-551309223570c8b952d2d05e>.

[44] Using the search engine available on La Libre website, we associated "Wallon" with "chômeur" (unemployed) and then "Wallon" with "grève" (strike) for the period going from the 1/1/2010 to the 8/15/2016 and for the section "Actualité" (news). We divided the found number of articles (1272) by the one found with only the word "Walloon" (12471).

[45] For example, in the 36 communities which are composed of more than 10,000 individuals, more than 85% of the population speaks the same language: either French, German or Dutch. Nevertheless, German speakers represent only one community of communication (see annexes for a definition).

[46] For example, several townships around Brussels (but in Flanders) are said to be "à facilité" and are composed of a high part of French-speakers (50% to 84% of the population in those townships) and there are also many French-speakers (up to 50% of the population) in other townships next to those first ones (Willaert, 2010).

[47] Only 0.69% of the Belgian population according to Leclerc (2015).

territory of Flanders, one child tended to inherit more than his siblings (for example, the farm of his father) and stayed under the authority of the father. However, in Wallonia, tradition consisted in giving equal inheritance to all siblings and, as a result, the relation between the children and the parents are stronger. Nowadays, we can still see some noticeable differences in terms of how a "family" is seen in Wallonia and in Flanders. For example, according to Eurostat ([2011]; 2015), the percentage of lone parent families with at least one child under 25 years old (in all family nuclei) in the different regions (namely 21 at the NUTS 2 level[48]) of Wallonia fluctuates between 10.4% and 20.5% with an average of 14.36% and a median of 14.45%. However, in different regions of Flanders (namely 22), this percentage varies between 6.4% and 12.9% with an average of 8.89% and a median of 8.7%[49]. Another divergence between Wallonia and Flanders concerning family matters is the percentage of married couples in all family nuclei. In Wallonia, this percentage fluctuates between 56.7% and 73.6% with an average of 63.76% and a median of 62.15%. In Flanders, it variates between 68.7% and 77.6% with an average of 72.68% and a median of 72%. In Brussels, this percentage is 61.9%[50] (Eurostat, [2011]; 2015).

Differences in terms of values and beliefs

Several differences exist between Walloons and Flemings in terms of beliefs. For example, Billiet (2011) uses the European Social Survey (ESS, 2008) and the ISPO survey (1991-2007) to measure the opinion of Walloons and Flemings according to various beliefs. He takes the mean scores and their standard deviations for the opinion of concerning five different socio-economic aspects[51] of the role social benefits from 565 (Walloons) and 1034 (Flemings) individuals. Billiet (2011) show that Walloons agree significantly (< 1% significance level) more with the belief that social benefits make people lazy (48% against 38% for Flemings) and Walloons are less concerned about other people (53% against 31% for Flemings). Another belief which is different between Walloons and Flemings is trust towards other people. Using the EVS (2008), Tabelini (2010) calculated the average trust in 69 European regions and he found that 28.9% of the Walloons say that they trust other people while 37.7% of the Flemings agree with this statement. Compared to the other regions, this difference makes Wallonia be the 45th region and Flanders be the 23rd region in terms of high level of trust. The difference in the above beliefs can be due to many explanatory variables such as culture but also economic situations, institutional backgrounds, etc. As a result, while, for example, some authors such as Guiso et al (2006) were able to find a causal link between culture and trust (see section 1), we do not have the data to show a causal link between the fact to be Walloon or Flemish and the trust level towards other people.

A series of differences in terms of values exist between Flemings and Walloons. For example, in the same study as above (ESS/ISPO), Billiet (2011) finds that Walloons are significantly (< 1% significance level) more willing to decrease the income inequalities than Flemings (76% against 66%). Walloons seems more willing to reduce difference in income if they exist to reward abilities and efforts. Another difference in terms of values is the family ties. Durante (2009) uses several questions[52] from the EVS (2001) and measures family ties among 220 European regions (and a sample of 69 000 individuals). He finds that, in Flanders, family ties are situated in the third decile of the distribution, suggesting lower family ties than most of the other European regions. However, in Wallonia, family ties are situated in the seventh decile of the distribution, suggesting stronger family ties than most of the other European regions[53]. Using EVS from 2008, we calculated the results to the same questions than Durante[54]. We found also an important difference between Walloons and Flemings. 58% of the Flemings answered that "Regardless of what the qualities and faults of one's parents are, one must

[48] Eurostat uses 3 levels of regions called NUTS (Nomenclature of territorial units for statistics) from large socio-economic regions (NUTS 1) to small regions used for specific diagnoses (NUTS 3). NUTS 2 is commonly used for the application of regional policies (Eurostat, 2016).

[49] For a detailed map, see <http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Lone_parent_families,_by_NUTS_level_3_region,_2011_(%C2%B9)_(%25_of_all_family_nucleii_with_at_least_one_registered_child_under_25)_RYB15.png>.

[50] For a detailed map, see <http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Married_couples,_by_NUTS_level_3_region,_2011_(%25_of_all_family_nucleii)_RYB15.png>.

[51] The questions and answers that he compared were about opinions on the welfare state: income inequality, responsibility of the government, and the economic, the moral, and the social consequences of social benefits.

[52] Durante uses three questions: "how important is your family?", "children have to respect and love parents only when these have earned it by their behavior and attitudes", and "parents have a life of their own and should not be asked to sacrifice their own well-being for the sake of their children".

[53] See figures in Annexes for a map and a figure of the distribution of the family ties among European regions.

[54] See table 5 in Annexes.

always love and respect them" (p.346, EVS 2008 Variable Report) while 77% of the Walloons answered similarly. In comparison, for the EVS for 1999, this answer was given by 59% of the Flemings and by 75% of the Walloons. We can link those differences among the two groups by the difference in family structures (see above). Galasso and Profeta (2011) finds that family structures, using Todd's dimensions, are correlated to family ties. Incomplete stem family is a family structure which is more authoritarian and less egalitarian and, as a result, ties with the family are less strong. Also, an egalitarian nuclear family is more egalitarian and less authoritarian which results in stronger family ties (Galasso & Profetta, 2011). If we assume that "francophones" can be approximated as Walloons (see reasoning in 5.1, §6) then other values showing differences between "francophones" and Flemings which were measured by Billiet et al. (2006) are interesting to show. Using the ESS (2003) and controlling for individual characteristics, they find that "francophones" are significantly (all < 1% level of significance) more attracted than Flemings by values such as the importance of money and recognition from others, of living in a secure environment, of enjoying life by any means, and of being original and creative. Again, as for all the beliefs cited in the previous paragraph, we do not claim that culture is the only possible explanatory variable for the values we took as example.

From values and beliefs to discrimination

If Walloons and Flemings are different in terms of culture, what causes employers to discriminate? (1) As we said earlier, prejudices can bring discrimination. For example, since the beginning of Belgium, as we have seen in section 2, Flemings have been fighting for their culture and language against the French-speaking elite first and then against the Walloons. Also, the Flemish movement had been willing to give a real Flemish culture and identity based on myths like the Battle of the Golden Spurs in 1302 where ancestors of Belgians fought against the King of France. The Flemish Movement modified the myths as being against the Flemings fighting the French invaders (Tollebeek, 1998). Thus, the history of conflicts between Flemings and French speakers (and later Walloons) might cause prejudices and thus discrimination against Walloons. However, some reasons not linked to culture could explain discrimination this group from Flemings. For example, the belief that Walloons are profiteers who take the money from Flemish contributors (Jamin, 2011) or the simple fact that Walloons are not as economically successful can bring prejudices (Bornhorst et al, 2004). (2) Stereotypes can lead to discrimination. Here also, they can be caused by a difference in culture or not. For example, thinking that Walloons are lazy because of the stereotype that Latin-cultures value more leisure (Brügger et al, 2009) is based on culture. However, thinking that Walloons are less likely to be performant in a job compared to his Flemish counterpart because the Walloon education system[55] is less efficient than the Flemish education system (PISA, 2012) is not especially a stereotype based on culture but can be due to many things such as political decisions or economic difficulties.

In conclusion, in the first channel, culture is causing discrimination through the use of medias. However, in the other channel, it is hard to find a causal link between ethnic belonging and values and beliefs and thus we cannot be sure that Walloons and Flemish differ in terms of culture. Also, while some stereotypes and prejudices causing discrimination against Walloons might be based on cultural differences, it is not the case for all of them. As a result, although it is possible, we cannot be sure that culture transmitted by parents and older generations lead to discrimination against Walloons.

6.3. Understanding the type of discrimination

For Neumark (2016), distinguishing between statistical and taste-based discrimination would bring more light to the current literature of discrimination. As explained in footnote 14, taste discrimination is caused by a loss of utility for an individual in contact with someone from a specific group. The concept of utility is commonly defined in economics as the indicator of satisfaction coming from the preferences made by an individual (Arnsperger & Van Parijs, 2003). Satisfaction is a close concept to the individual's personal feelings and, as a result, prejudices are likely to affect his utility directly[56]. However, it is probably not true for the concept of stereotype which is resulting from our way to deal with information, and is unlikely to impact our satisfaction level in a direct way. Moreover, in the statistical discrimination model (see also footnote 15), employers choose a job seeker by using what they think is the average productivity of his group, correctly or not. This is closely related to stereotype because, in the same way as for stereotypes, employers use their belief about average productivity to deal with the complexity of the world and, thus, it results in a generalization process, which is correct or not. Also, according to Neumark (2016), prejudices are not linked to the statistical model. In conclusion, by being able to distinguish whether discrimination is

[55] The Walloon education system is depending on the Belgian French Community.

[56] Neumark (2016) also refer to the link between taste discrimination and prejudice.

caused by a prejudice or by a stereotype, it might give more clues on which type of discrimination we are confronted to (taste or statistical-based).

In addition to that, psychologists test a third type of discrimination: implicit discrimination (Demoulin & Yzerbyt, 2015; Whitley & Kite, 2010). This type of discrimination is based on the fact that employers discriminate unconsciously because of unconscious stereotypes. This can occur even though employers want be equal towards different groups. According to Neumark, this detecting this type of discrimination could help to understand better discriminatory behaviors. In order to find implicit discrimination, the Implicit Association Test (IAT) has been designed by psychologists (see definitions in Annexes). If implicit discrimination is found, it could imply that punishing discrimination is a bad policy since employers do not discriminate on purpose.

7. Conclusion

Firstly, we performed an empirical study on hiring discrimination between Flemings and Walloons in Wallonia and Flanders. Using a correspondence study, we found that Walloons are discriminated against in both Wallonia and Flanders. The fact that Walloon employers prefer Flemish workers to Walloon workers is a less expected result if we follow the minimal group paradigm (Tajfel, 1978). However, stereotypes driven by medias could explain this preference from Walloon employers. We also provided some insight on some dimensions of the job offers for which discrimination occurs more often (gender of the recruiter, type of job contract, the length of contract, the applications managed by interim office or not, etc.) However, we did not provide a deep analysis on the impact of these dimensions and it could be an idea of further research. Several limitations have to be made in regard to our results. First, we limit ourselves to specific jobs requiring low level of education. We also study discrimination in geographic zones close to the linguistic frontier. Also, the job offers we applied to were only found on the public job databases for Flanders and Wallonia. As a result, the measured discrimination only allows to suspect discrimination to a larger scale. Thus, in the future, it could be interesting to do a larger scale experiment. Second, correspondence studies only allow to measure discrimination at the first stage of the hiring process. However, as Neumark (2016) and Bovenkerk (1992) show, this should be enough to expect discrimination in the other stage of the hiring process. Third, one issue we were confronted to was that it is not easy to measure whether it was Walloons or Belgian French-speakers who were discriminated against. However, while the names used on the CVs had the same sounding for both groups, Walloon candidates were clearly living, going to school, and born in Wallonia. In addition, we proposed to use Walloon German-speakers and French candidates to be able measure if French-speakers and Walloons were perceived differently by Flemish employers.

Secondly, the design of correspondence studies allows to find a clear causal effect and to control for omitted variables. Thus, this is solving two main issues that are generally present in the various methods which try to find the impact of culture on economic outcomes. However, while culture can influence discrimination through the medias, we were not able to show that the reason why Walloons were discriminated against was caused by cultural differences with Flemings. Yet, this could be tested with a deep analysis of the causal link between Flemings and Walloons and their respective differences in terms of beliefs and values.

Thirdly, we discussed about the interest of using psychology to understand better the type of discrimination. The concept of prejudice and stereotypes seems close to the taste-based discrimination and the statistical-based discrimination respectively. Since we were not able to distinguish which type of discrimination was occurring in our experiment, we cannot propose a specific solution to the discrimination against Walloon workers. Thus, it would be interesting to find a way to identify the type of discrimination in a later study. Using a IAT test to detect whether employers discriminate unconsciously would help to know what actions can be made to diminish discrimination in the case of our specific experiment.

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Table 1: Data Description for Wallonia, sensu stricto

Observations	Number of vacancies	Neither candidate positive call-back	Both candidates positive call-back	Only Walloon candidate positive call-back	Only Flemish candidate positive call-back	NDR	X^2	PCR	t
A. Positive call-back: All observations									
All observations	285	276	5	0	4	-0.44**	4	0.56**	2.011
B. Positive call-back: Heterogenity by regions									
Hainaut	139	133	3	0	3	-0.5*	3	0.5*	1.745
Liège	146	143	2	0	1	-0.33	1	0.67	1.000
C. Positive call-back: Heterogeneity by gender of the recruiter									
Woman	147	142	3	0	2	-0.4	2	0.6	1.419
Man	116	113	2	0	1	-0.18*	3	0.67*	1.744
Unknown gender	22	21	0	0	1	-1	1	0	1.000
D. Positive call-back: Heterogeneity by duration of contract									
Temporary contract	148	146	1	0	1	-0.33	2	0.5	1.000
Indeterminate contract	137	130	4	0	3	-0.5*	3	0.57*	1.745
E. Positive call-back: Heterogeneity by type of contract									
Part-time	145	144	0	0	1	-0.2	1	0	1.000
Full-time	140	132	5	0	3	0*	3	0.63	1.745
F. Positive call-back: Vacation via interim office or not									
Via interim office	77	74	1	0	2	-0.29	2	0.33	1.424
Not via interim office	208	202	4	0	2	-0.2	2	0.67	1.418
G. Positive call-back: Vacation asking for language ability or not									
With language ability	94	87	4	0	3	-0.29*	3	0.57*	1.751
Without language ability	191	189	1	0	1	-0.15	1	0.5	1.000
H. Positive call-back: Information of customer contact or not in the vacation									
With customer contact	186	178	5	0	3	-0.36*	3	0.63*	1.742
Without customer contact	99	98	0	0	1	-0.19	1	0	1.000
I. Positive call-back: Information of teamwork or not in the vacation									
Teamwork	28	26	1	0	1	-0.67	1	0.5	1.000
Without teamwork	257	250	4	0	3	-0.33*	3	0.57*	1.739
J. Positive call-back: Distance from workplace in kilometers for both candidates									
Less than 30 km	190	183	4	0	3	-0.24*	3	0.57*	1.741
Not less than 30 km	95	93	1	0	1	-0.25	1	0.5	1.000
K. Positive call-back: Distance by car from workplace in minutes for both candidates									
Less than 30 min	168	165	2	0	1	-0.25	1	0.67	1.422
Not less than 30 min	117	111	3	0	3	-0.22*	3	0.5**	2.016

Notes. The net discrimination rate (NDR) is the substraction of the number of applications for which the Walloon candidate was preferred by the number of applications for wich the Flemish candidate was preferred, this substraction being divided by the number of job offers for which at least one candidate got a positive call-back. The chi-square test for the NDR tests the null hypothesis that both candidates are treated unfavourably in the same way. The positive call-back ratio -PCR) is measured by the division of the percentage of positive call-back given all applications sent for the Walloon candidate by the same percentage for the Flemish candidate. THe t-test for the PCR tests the null hypothesis that the probability of a positive answer is the same for candidates from both groups. *** (**) (*) are the significance levelat the 1% (5%) (10%) level respectively.

Table 2: Data Description for Wallonia, sensu lato

Observations	Number of vacancies	Neither candidate positive call-back	Both candidates positive call-back	Only Walloon candidate positive call-back	Only Flemish candidate positive call-back	NDR	X^2	PCR	t
A. Positive call-back: All observations									
All observations	285	261	18	0	6	-0.25**	6	0.75**	2.471
B. Positive call-back: Heterogenity by regions									
Hainaut	139	123	12	0	4	-0.25**	4	0.75**	2.022
Liège	146	138	6	0	2	-0.25	2	0.75	1.419
C. Positive call-back: Heterogeneity by gender of the recruiter									
Woman	147	130	14	0	3	-0.18*	3	0.82*	1.744
Man	116	110	4	0	2	-0.33	2	0.67	1.420
Unknown gender	22	21	0	0	1	-1	1	0	1.000
D. Positive call-back: Heterogeneity by duration of contract									
Temporary contract	148	144	2	0	2	-0.5	2	0.5**	2.022
Indeterminate contract	137	117	16	0	4	-0.2**	4	0.8**	2.022
E. Positive call-back: Heterogeneity by type of contract									
Part-time	145	142	3	0	0	/	/	1	/
Full-time	140	119	15	0	6	-0.29**	6	0.71**	2.495
F. Positive call-back: Vacation via interim office or not									
Via interim office	77	67	8	0	2	-0.2	2	0.8	1.424
Not via interim office	208	194	10	0	4	-0.29**	4	0.71**	2.015
G. Positive call-back: Vacation asking for language ability or not									
With language ability	94	81	11	0	2	-0.15	2	0.85	1.422
Without language ability	191	180	7	0	4	-0.36**	4	0.64**	2.016
H. Positive call-back: Information of customer contact or not in the vacation									
With customer contact	186	165	17	0	4	-0.19**	4	0.81**	2.016
Without customer contact	99	96	1	0	2	-0.67	2	0.33	1.422
I. Positive call-back: Information of teamwork or not in the vacation									
Teamwork	28	25	2	0	1	-0.33	1	0.67	1.000
Without teamwork	257	236	16	0	5	-0.24**	5	0.76**	2.254
J. Positive call-back: Distance from workplace in kilometers for both candidates									
Less than 30 km	190	174	12	0	4	-0.25**	4	0.75**	2.016
Not less than 30 km	95	87	6	0	2	-0.25	2	0.75	1.422
K. Positive call-back: Distance by car from workplace in minutes for both candidates									
Less than 30 min	168	159	7	0	2	-0.22	2	0.78	1.419
Not less than 30 min	117	102	11	0	4	-0.27**	4	0.73**	2.026

Notes. The net discrimination rate (NDR) is the substraction of the number of applications for which the Walloon candidate was preferred by the number of applications for wich the Flemish candidate was preferred, this substraction being divided by the number of job offers for which at least one candidate got a positive call-back. The chi-square test for the NDR tests the null hypothesis that both candidates are treated unfavourably in the same way. The positive call-back ratio -PCR) is measured by the division of the percentage of positive call-back given all applications sent for the Walloon candidate by the same percentage for the Flemish candidate. THe t-test for the PCR tests the null hypothesis that the probability of a positive answer is the same for candidates from both groups. *** (**) (*) are the significance levelat the 1% (5%) (10%) level respectively.

Table 3: Data Description for Flanders, sensu stricto

Observations	Number of vacancies	Neither candidate positive call-back	Both candidates positive call-back	Only Flemish candidate positive call-back	Only Walloon candidate positive call-back	NDR	X^2	PCR	t
A. Positive call-back: All observations									
All observations	253	203	29	15	6	0.18**	3.857	1.26**	1.975
B. Positive call-back: Heterogenity by regions									
Oost-Vlaanderen	135	102	20	10	3	0.21*	3.769	1.3*	1.962
Limburg	118	101	9	5	3	0.12	0.500	1.17	0.706
C. Positive call-back: Heterogeneity by gender of the recruiter									
Woman	161	125	17	14	5	0.25**	4.263	1.41**	2.086
Man	72	61	10	1	0	0.09	1.000	1.1	1.000
Unknown gender	20	17	2	0	1	-0.33	1.000	0.67	-1.000
D. Positive call-back: Heterogeneity by duration of contract									
Temporary contract	65	49	9	5	2	0.19	1.286	1.27	1.136
Indeterminate contract	188	154	20	10	4	0.18	2.571	1.25	1.610
E. Positive call-back: Heterogeneity by type of contract									
Part-time	128	104	15	7	2	0.21*	2.778	1.29*	1.679
Full-time	125	99	14	8	4	0.15	1.333	1.22	1.156
F. Positive call-back: Vacation via interim office or not									
Via interim office	30	23	4	2	1	0.14	0.333	1.2	0.571
Not via interim office	223	180	25	13	5	0.19*	3.556	1.27*	1.897
G. Positive call-back: Vacation asking for language ability or not									
With language ability	101	81	11	5	4	0.05	0.111	1.07	0.332
Without language ability	152	122	18	10	2	0.27**	5.333	1.4**	2.343
H. Positive call-back: Information of customer contact or not in the vacation									
With customer contact	194	156	22	12	4	0.21**	4.000	1.31**	2.016
Without customer contact	59	47	7	3	2	0.08	0.200	1.11	0.444
I. Positive call-back: Information of teamwork or not in the vacation									
Teamwork	117	92	15	7	3	0.16	1.600	1.22	1.268
Without teamwork	136	111	14	8	3	0.2	2.273	1.29	1.515
J. Positive call-back: Distance from workplace in kilometers for both candidates									
Less than 30 km	226	186	22	13	5	0.2*	3.556	1.3*	1.896
Not less than 30 km	27	17	7	2	1	0.1	0.333	1.13	0.570
K. Positive call-back: Distance by car from workplace in minutes for both candidates									
Less than 30 min	211	174	21	11	5	0.16	2.250	1.23	1.505
Not less than 30 min	42	29	8	4	1	0.23	1.800	1.33	1.355

Notes. The net discrimination rate (NDR) is the substraction of the number of applications for which the Flemish candidate was preferred by the number of applications for wich the Walloon candidate was preferred, this substraction being divided by the number of job offers for which at least one candidate got a positive call-back. The chi-square test for the NDR tests the null hypothesis that both candidates are treated unfavourably in the same way. The positive call-back ratio -PCR) is measured by the division of the percentage of positive call-back given all applications sent for the Flemish candidate by the same percentage for the Walloon candidate. THe t-test for the PCR tests the null hypothesis that the probability of a positive answer is the same for candidates from both groups. *** (**) (*) are the significance levelat the 1% (5%) (10%) level respectively.

Table 4: Data Description for Flanders, sensu lato

Observations	Number of vacancies	Neither candidate positive call-back	Both candidates positive call-back	Only Flemish candidate positive call-back	Only Walloon candidate positive call-back	NDR	X^2	PCR	t
A. Positive call-back: All observations									
All observations	253	167	50	26	10	0.19***	7.111	1.27***	2.700
B. Positive call-back: Heterogenity by regions									
Oost-Vlaanderen	135	84	33	13	5	0.16*	3.556	1.21*	1.904
Limburg	118	83	17	13	5	0.23*	3.556	1.36*	1.907
C. Positive call-back: Heterogeneity by gender of the recruiter									
Woman	161	100	30	23	8	0.25***	7.258	1.39***	2.748
Man	72	53	14	3	2	0.05	0.200	1.06	0.445
Unknown gender	20	14	6	0	0	/	/	/	/
D. Positive call-back: Heterogeneity by duration of contract									
Temporary contract	65	40	17	5	3	0.08	0.500	1.1	0.704
Indeterminate contract	188	127	33	21	7	0.23***	7.000	1.35***	2.689
E. Positive call-back: Heterogeneity by type of contract									
Part-time	128	85	26	13	4	0.21**	4.765	1.3**	2.216
Full-time	125	82	24	13	6	0.16	2.579	1.23	1.616
F. Positive call-back: Vacation via interim office or not									
Via interim office	30	14	12	3	1	0.13	1.000	1.15	1.000
Not via interim office	223	153	38	23	9	0.2**	6.125	1.3**	2.504
G. Positive call-back: Vacation asking for language ability or not									
With language ability	101	62	23	9	7	0.05	0.250	1.07	0.498
Without language ability	152	105	27	17	3	0.3***	9.800	1.47***	3.226
H. Positive call-back: Information of customer contact or not in the vacation									
With customer contact	194	129	38	19	8	0.17**	4.481	1.24**	2.136
Without customer contact	59	38	12	7	2	0.24*	2.778	1.36*	1.693
I. Positive call-back: Information of teamwork or not in the vacation									
Teamwork	117	77	24	11	5	0.15	2.250	1.21	1.508
Without teamwork	136	90	26	15	5	0.22**	5.000	1.32**	2.270
J. Positive call-back: Distance from workplace in kilometers for both candidates									
Less than 30 km	226	152	41	24	9	0.2***	6.818	1.3***	2.646
Not less than 30 km	27	15	9	2	1	0.08	0.333	1.1	0.570
K. Positive call-back: Distance by car from workplace in minutes for both candidates									
Less than 30 min	211	141	40	21	9	0.17**	4.800	1.24**	2.211
Not less than 30 min	42	26	10	5	1	0.25	2.667	1.36	1.667

Notes. The net discrimination rate (NDR) is the substraction of the number of applications for which the Flemish candidate was preferred by the number of applications for wich the Walloon candidate was preferred, this substraction being divided by the number of job offers for which at least one candidate got a positive call-back. The chi-square test for the NDR tests the null hypothesis that both candidates are treated unfavourably in the same way. The positive call-back ratio -PCR) is measured by the division of the percentage of positive call-back given all applications sent for the Flemish candidate by the same percentage for the Walloon candidate. THe t-test for the PCR tests the null hypothesis that the probability of a positive answer is the same for candidates from both groups. *** (**) (*) are the significance levelat the 1% (5%) (10%) level respectively.

Table 5: Normalized number of responders to the question about respect of parents (EVS, 2008)

Regardless of what the qualities and faults of one's parents are, one must always love and respect them" (p.346, EVS 2008 Variable Report)

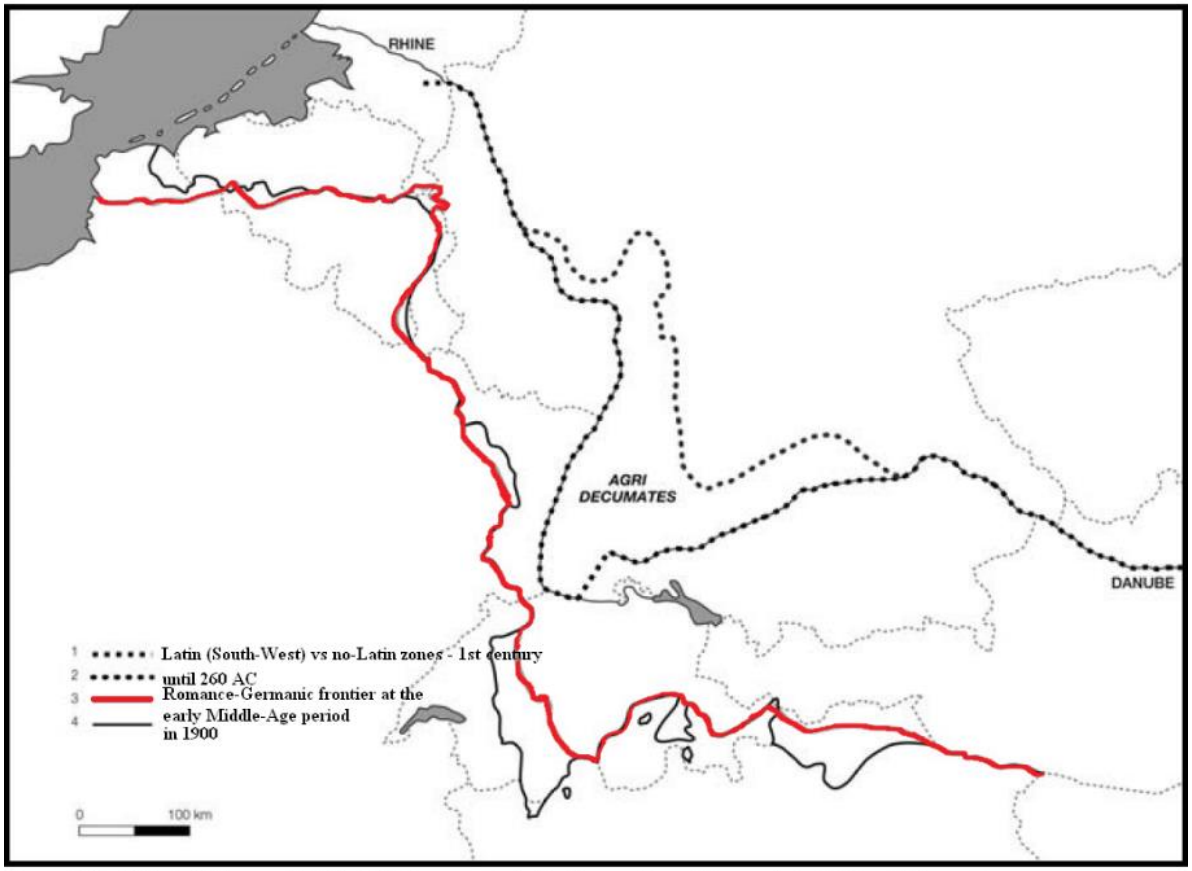
	depends	always	neither	total	%
Flanders	499.4148	365.7219	0	783	0.577266922
Wallonia	373.16191	109.21812	0	583	0.773584906

Normalization is done according to the EVS Variable Report: given the sample size for Flemings and Walloons, it is needed to multiply the population of respondents in Wallonia by 0.82741 and the number of respondents from Flanders by 1.1049 in order to have representative sample of the Belgian population.

Source: EVS (2010): European Values Study 2008: Belgium (EVS 2008). GESIS Data Archive, Cologne. ZA4759 Data file Version 1.1.0, doi:10.4232/1.10156

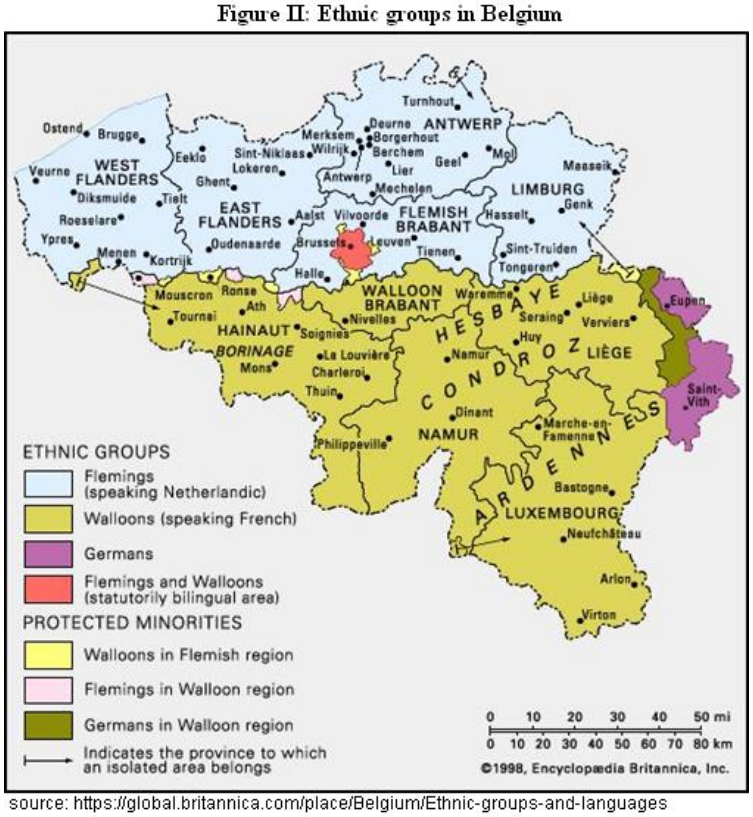
Figures

Figure I: Evolution of the Romance-Germanic Language Border



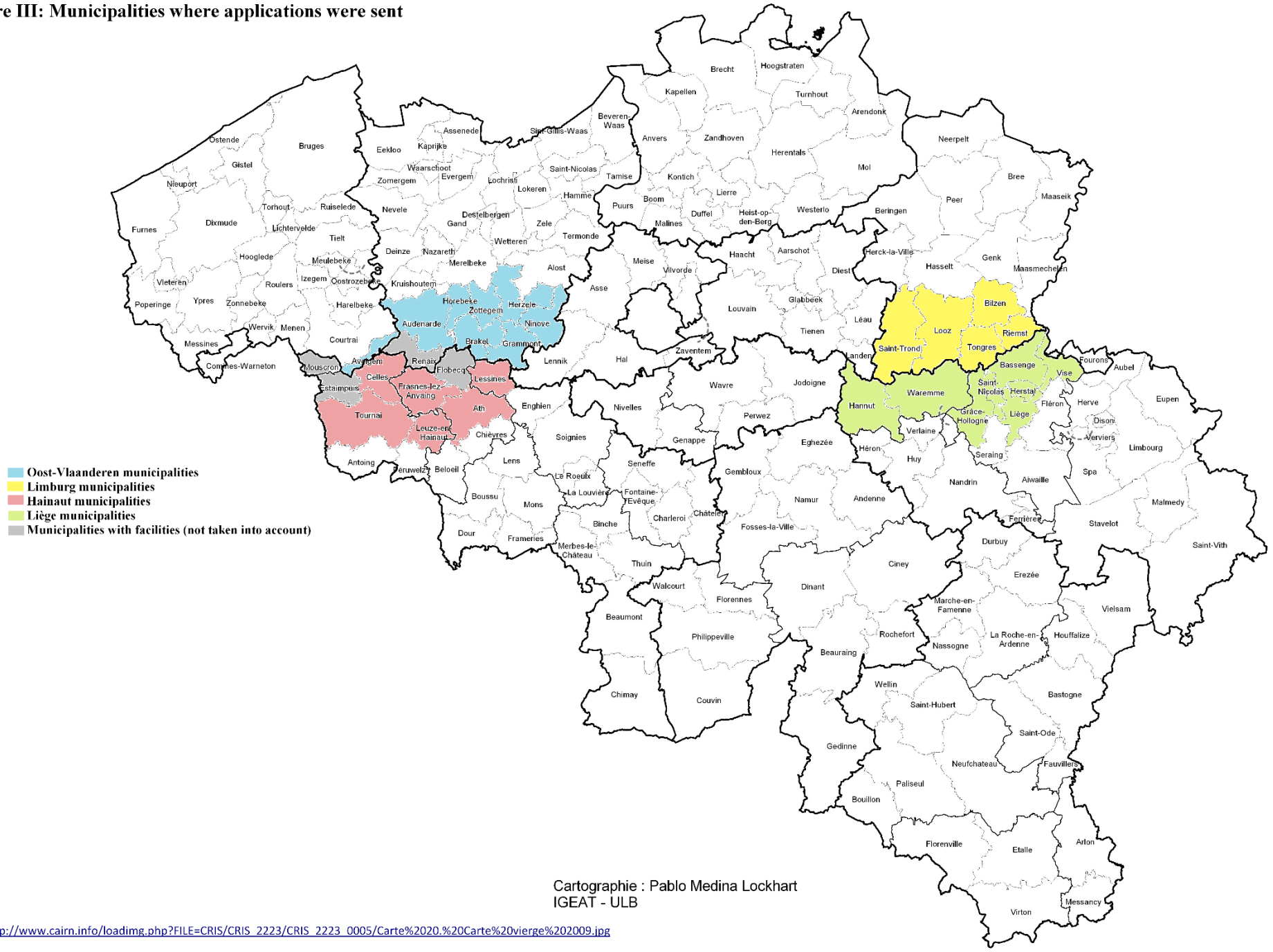
Source: Treffers-Daller, J., & Willemyns, R. (Eds.). (2002). *Language contact at the Romance-Germanic language border.* Multilingual Matters, p.13.

Figure II: Ethnic groups in Belgium



source: https://global.britannica.com/place/Belgium/Ethnic-groups-and-languages

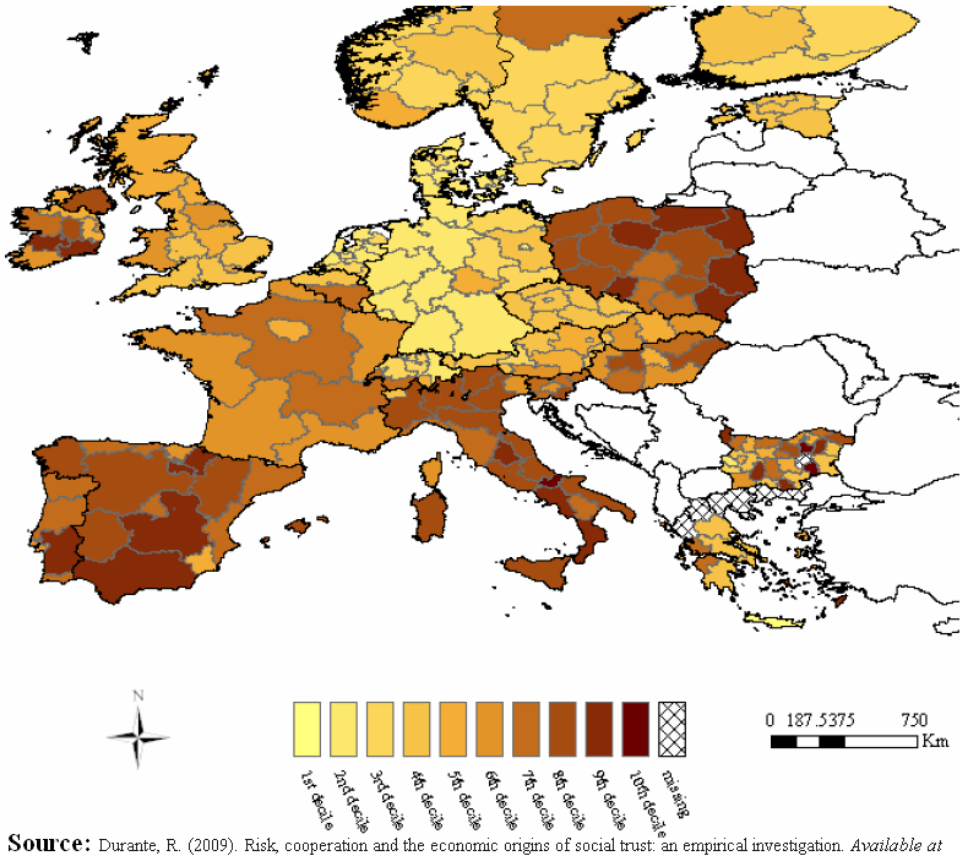
Figure III: Municipalities where applications were sent



source: http://www.cairn.info/loadimg.php?FILE=CRIS/CRIS_2223/CRIS_2223_0005/Carte%2020.%20Carte%20vierge%202009.jpg

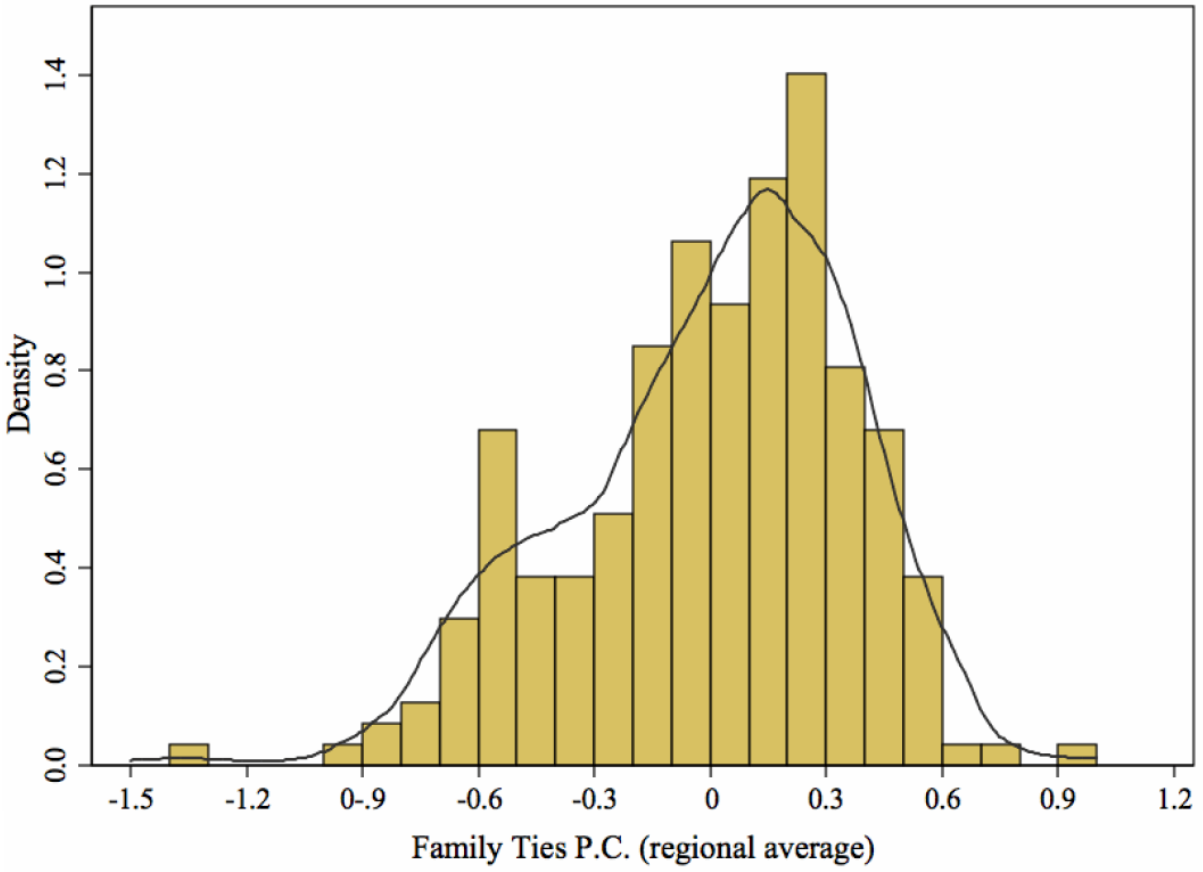
Municipalities where applications were sent			
Hainaut	**Liège**	**Oost-Vlaanderen**	**Limburg**
Ath	Ans	Avelgem	Bilzen
Celles	Braives	Brakel	Borgloon
Ellezelles	Crisnée	Geraardsbergen	Gingelom
Frasnes-lez-Anvaing	Faimes	Herzele	Hoeselt
Lessines	Grace-Hollogne	Horebeke	Kortessem
Pecq	Hannut	Kluisbergen	Lanaken
Silly	Herstal	Maarkedal	Ninove
Tournai	Juprelle	Ninove	Sint-Truiden
	Liège	Oudenaarde	Tongeren
	Oreye	Wortegem-Petegem	
	Oupeye	Zottegem	
	Remicourt	Zwalm	
	Visé		
	Waremme		
Total number of inhabitants for the municipalities by provinces (Institut National de Statistiques, 2015)			
154 118	393 376	198 980	165 702

Figure IV: Level of trust towards other people among 220 European Regions (Durante, 2009)



Source: Durante, R. (2009). Risk, cooperation and the economic origins of social trust: an empirical investigation. *Available at SSRN 1576774.*

Figure V: Distribution of the level of trust towards other people in 220 European regions (Durante, 2009



Source: Durante, R. (2009). Risk, cooperation and the economic origins of social trust: an empirical investigation. *Available at SSRN 1576774.*Using, EVS (2001).

Resumes A and B for Boussart (Tournai)

Thomas Boussart

CV A

Nationalité: belge
Adresse: Rue de Mons 44, 7970 Beloeil
Numéro de téléphone: (0486) 340 611
Date de naissance: 17/03/1996
Lieu de naissance: Tournai
Permis de conduire B
Adresse e-mail: thomasboussart@hotmail.com

Expérience professionnelle

Caissier / étalagiste
Delhaize (Tournai)
Juillet 2012 et 2013

Diplôme

Enseignement Professionnel de Qualification, vendeur (troisième degré)
Institut des Ursulines (Tournai)
Diplômé en 2014

Connaissances informatiques

Applications bureaucratiques : Microsoft Word, Office et Powerpoint

Connaissances linguistiques

Français
Néerlandais

Centres d'intérêt

Football (en club)

CV B

CV Thomas Boussart

DONNEES PERSONELLES

Rue de Mons 44
7970 Beloeil
(0486) 340 611
thomasboussart@hotmail.com

Né à Tournai le 21 février 1996
Belge
Permis de conduire B

Diplome

Enseignement professionnel de qualification (3e degré), vendeur — 2008 - 2014
Institut des Ursulines Tournai

EXPERIENCE PROFESSIONNELLE

Job d'étudiant
- Vendeur à la boulangerie "Le Croissant" à Tournai — 08/2012 08/2013

COMPETENCES

Langues
- Français
- Néerlandais

Connaissances informatiques
- Très bonne connaissance de Microsoft Office

HOBBY

Sport en général et basketball en particulier

Application letters A and B for Boussart (Tournai)

Model A

Chère Madame, Cher Monsieur,

Je suis très interessé par la fonction de [] que vous annoncez sur le site web du Forem.

Je viens de finir des études de vendeur (enseignement professionnel de qualification). Mon expérience professionnelle se limite à des jobs de vacances, mais je suis très motivé pour occuper la fonction que vous proposez.

J'attends de vos nouvelles et j'espère que vous m'inviterez à un entretien.

Avec mes sincères salutations,

Thomas Boussart

Model B

Chère Madame/ Cher Monsieur

Je souhaiterais poser ma candidature pour l'offre d'emploi [ ] que vous avez postée sur le site du Forem. J'ai obtenu en juin 2014 un diplôme de vendeur (enseignement professionnel de qualification, 3e degré). J'ai par ailleurs acquis une certaine expérience professionnelle en tant qu'étudiant jobiste dans une boulangerie. Vous trouverez ci-joint mon CV qui vous apportera quelques précisions sur mon parcours et mes compétences.

Si vous avez des questions concernant ma candidature, j'y répondrai volontiers lors d'un entretien.

Dans l'attente, je vous prie d'agréer, Madame, Monsieur, mes sincères salutations.

Bien à vous,

Thomas Boussart

Definitions:

Implicit Association Test: In the most classic form of this test, series of words related to good or bad feelings are associated with names of a majority and a minority group. Like in a rapidity game, the subjects must hit the left or right case of his keyboard for a specific group of words (bad, good, majority group names, minority group names). The left and right cases are associated to each group alternatively. This test measures the time of reaction of the subjects of the experiment when they view the words. The more the group of words are mixed, the more it becomes difficult for the subject. If the laps of time to accomplish the all list of words increase greatly when minority groups names and good feelings words are both selected by same case, it means that there is an implicit discrimination bias (Whitley & Kite, 2010).

Taste-based discrimination: Becker developed two models of discrimination based on taste: discrimination by employers, and discrimination among employees or by customers. Given the aim of our study, we will summarize the importance of these three models for hiring discrimination only. Let's take the example of race discrimination against black workers. To the employer, as well as to the other workers, or to the customers, taste discrimination is reflected by a distaste for black worker. Working with black workers will affect negatively their utility. In order not to lose utility, not to disturb discriminatory workers, or not to lose discriminatory customers, discriminatory employers will not hire black workers if they have the same the marginal productivity as the other non-discriminated workers. It will stop being the case as soon as the loss of utility generated by hiring black workers is counterbalanced by a greater marginal productivity of those workers (Cahuc & Zylberberg, 2004).

Community of communication: set of highly interconnected people in terms of mobile phone communication (Blondel et al, 2008).

Trust game: Two players must invest together in order to make profit. Both playing in the same period, they can either both quit after each period and they both lose their profits, they can both continue and the profits are divided by two, or one can quit and get everything while the other stay to invest for the next period and lose all his investment (Algan & Cahuc, 2013).

Natural experiment: A natural experiment uses "exogenous changes in the economic environment of certain agents in order to compare their reactions to those of other agents who have not undergone these changes" (p.730, Cahuc & Zylberberg, 2004). Natural experiments are simpler in terms of methodology and allow providing realistic results for the specific case that is studied. Also, natural experiments are a good tool to test whether some policies are doing what was expected or not. However, this kind of experiment depends on exogenous policies and is thus limited in terms of availability. Also, since it studies a specific case such as blind auditions in orchestras, it is difficult to generalize (Cahuc & Zylberberg, 2004).

Vignette studies: It consists of creating different profiles of fictive job seekers that are presented to employers who are volunteering for a laboratory experiment. These profiles of job seekers are manipulated is such a way that they have similar characteristics except for the discriminatory determinant we want to study (gender, race, culture, etc). These employers have to select them for a fictive hiring (Neumark, 2016). One issue about vignette studies is the lack of realism of the experiment. Indeed, job seekers' profiles tend to be identical in unrealistically many characteristics. Also, employers know it is only a simulation and might voluntarily lack of sincerity in their answers. However, vignette studies enable to choose every characteristic of the job seekers and to set different level of information in the resumes. This facilitates the identification between taste and statistical discrimination. Indeed, for example, if the additional information does not affect the result, we might conclude that the discrimination is taste-based. However, conclusions must not be too fast because the non-presence of any impact of additional information might just be caused by the fact that there was already enough information initially. Thus, if we are in this case, discrimination might still be either statistical-based, either taste-based, or both. An additional advantage of vignette studies is that they allow researchers to ask the employer why he discriminates against specific candidates and this allows further understanding of the type of discrimination (taste or statistical) (Neumark, 2016).