Ethnosizing Immigrants*

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Abstract

The paper provides a new measure of the ethnic identity of immigrants and explores its evolution in the host country. The ethnosizer, a measure of the intensity of a person's ethnic identity, is constructed from information on the following elements: language, culture, societal interaction, history of migration, and ethnic self-identification. A two-dimensional concept of the ethnosizer classifies immigrants into four states: integration, assimilation, separation and marginalization. We find that ethnic identity persists stronger for females, Muslims, those with schooling in the home country, and older age at the time of entry. Young migrants are assimilated or integrated the most. While Muslims do not integrate, Catholics and other Christians assimilate the best. Immigrants with college or higher education in the home country integrate very well, but do not assimilate. Having some schooling is worse than no education for integration or assimilation. The ethnicity of individuals, measured by country of origin, remains relevant.

JEL classification: F22; J15; J16; Z10
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1. Introduction

The notion of migrant ethnicity is attracting a growing interest in economic research. Migration theories that treat immigrants as a homogeneous group are becoming less relevant in the presence of ethnically and culturally diverse populations. Strong ethnic differences are found, for instance, in the labor market preferences and behavior (e.g., Piche et al., 2002; Dana, 1997, Constant & Zimmermann, 2005), in wages and income (e.g., Zorlu, 2003; Neuman & Oaxaca, 2004), as well as in the schooling performance (e.g., Betts & Fairlie, 2001; Smith, 2004) of immigrants. Economic research on the significance of immigrants' ethnic diversity shares the 'primordial' understanding of ethnicity as a cultural inheritance or a "common ancestry based on shared individual characteristics and/or shared sociocultural experiences" gained at birth (Ruble, 1989, p. 401; Dashefsky in Driedger, 1989). For economists, ethnicity is often a permanent and static social characteristic of an individual, measured in terms of country of origin, nationality, citizenship or race.

While the perception of ethnicity as membership in a group with common ancestry is accepted in economics, it is recognized as problematic in other social sciences:

> "The preponderance of research on ethnicity has focused on broad ethnic categorizations[, which] lump people across nationalities and regions into one group such as 'Hispanics' or 'Asians' based on similarities in language, region of origin, or visual phenotypical distinctions… [This] research ignores the fact that many national/regional origins make up a particular ethnic category. Attempts to generalize findings to all 'Hispanics' or all 'Asians' may be made in error as acculturative processes may impact members differently." (Ogden et al., 2004, p. 2-3)

The static understanding of ethnicity does not allow accounting for an individual's sense of belonging and commitment to the group of people who share a common ancestry and culture while they are in a heterogeneous host society. For example, the classification of an immigrant as ethnically Turkish based solely on his citizenship, nationality, or Turkish parenthood loses out

crucial information on how culturally, socially and psychologically committed to the Turkish ancestry and values this immigrant is.

To convey the inner feelings of belonging, commitment and overall attitude to the culture and society of origin an alternative 'individualist' notion of *ethnic identity* has been generated and used in anthropology, psychology, sociology and marketing. Ethnic identity is "developed, displayed, manipulated, or ignored in accordance with the demands of a particular situation" (Royce in Ruble, 1989, p. 401). There is a general agreement that when compared to the static, 'primordial' understanding of ethnicity, ethnic identity as a changing characteristic is a better measurement of the internal transformations in personal beliefs and commitments to values and culture inherited from the ancestry. Research documents, it is ethnic identity rather than the ethnicity of immigrants that defines their social, psychological (e.g., Hazuda et al., 1988; Phinney, 1990, 1992, 1996), and consumer behavior (e.g., Hirshman, 1981; Webster, 1990; Laroche et al., 2005).

Our research concentrates on the study of ethnic identity, while it also values and uses the notion of ethnicity. We treat ethnic identity and ethnicity as two distinct, but closely related concepts. While ethnic identity can change, adapt, and evolve after arrival, ethnicity remains a permanent characteristic of the country of origin. We assume that ethnic identity becomes meaningful and ethnic issues relevant after migration. Prior to migration, there is no challenge to the commitment and sense of belonging to values and culture inherited upon birth from the migrants' parents. The challenge appears after arrival in the host county when pre- and post-migration cultures clash. As immigrants are now exposed to a dissimilar ethnicity, different levels of self-identification and feelings of belonging - either to culture and values of ancestry or to the host society - develop. We examine various states of post-migration ethnic identity by

individual characteristics which could not be affected by the act of migration. Once a person migrates, the ambivalence and the struggle of cultures begin.

How can we measure the intensity of the ethnic identity of a migrant? How much ethnic an immigrant is and where does this position him in the acculturation quadrant? Are people of certain age, gender, education, and religion more likely to maintain a strong commitment to the origin (or be more ethnic) after migration? Does ethnicity affect the ethnic identity of migrating individuals? In Section 2 we explain our concepts of measuring ethnic identity and of constructing the *ethnosizer*. Section 3 presents the data set used, and discusses the variables in our analysis and their descriptive performance. Section 4 investigates the empirical behavior of the derived measures of ethnic identity and examines their determinants econometrically. Section 5 contains a summary and concludes.

2. Measuring Ethnic Identity

While a general understanding of flexible ethnic identity is shared among many social scientists, there is still no consensus on the elements that compose ethnic identity. Among the suggested key elements of ethnic identity are the subjective expression of one's commitment, a sense of belonging to or self-identification with the culture, values, and beliefs of a specific ethnic group (e.g., Masuda et al., 1970; Tzuriel & Klein, 1977) and social life (e.g., Masuda et al., 1970; Makabe, 1979; Unger et al., 2002). Most frequently employed are cultural elements such as language, religion, media and food preferences, celebrated holidays and behavior (e.g., Phinney, 1990, 1992, Unger et al., 2002; Laroche et al., 2005). A combination of these elements with heavy emphasis on culture[1] has been used to develop measurements of ethnic identity, which are

[1] Cultural elements have been used in social research so heavily that many researchers began to use "the term ethnic identity as synonymous with cultural identity" (Laroche et al., 2005, p. 145).

either specific to a certain ethnic group of individuals (e.g., Kwan & Sodowsky, 1997; Nguyen & von Eye, 2002), or are generally applicable to ethnically diverse samples of immigrants (e.g., Phinney 1990, 1992; Laroche et al., 2005).

In this paper we develop a more general approach to ethnic identity, agreeing with Phinney (1990) that "there are elements that are both common across groups and unique to ethnic identity for any group" (p. 507). We assume that the uniqueness of each ethnic group is captured by the ethnicity of the individual. Ethnic identity as a measure of distance from the own ethnicity; it can differ among immigrants of the same kind, or be comparable among immigrants of different ethnic backgrounds. We consider the generality of ethnic identity to be one of the most important characteristics of this concept of change in identity, because it makes it possible to compare immigrants within an ethnic group, and to draw parallels between representatives of different ethnicities. To operationalize the general term of ethnic identity we employ five groups of quantifiable attributes, frequently used in previous research on the measurement of this type of concepts: (i) linguistic; (ii) visible cultural elements; (iii) ethnic self-identification; (iv) ethnic network; and (v) migration history. Note that, we choose these five groups because while all five of the selected factors are relevant they are not specific to any ethnic group.

Social scientists approach various factors of ethnic identity from different angles. Some researchers define ethnic identity in terms of immigrants' origins (e.g., Laroche et al., 2005). Others look at ethnic identity from the host culture perspective and measure it as the level of commitment to the host society and its values (e.g., Makabe, 1979, Ullah 1985). Yet, a third group of researchers expresses the ethnic identity of immigrants using both attachment to the culture or society of origin and devotion to the host country (e.g., Montgomery, 1992; Unger et al., 2002; Nguyen, 2002). Similar to the latter group, in this paper we recognize that maintaining

or losing one's own culture and self-identification with the origin is very closely related to gaining the culture of and self-identifying with the host society.

We, therefore, define ethnic identity as the balance between commitment or self-identification with the culture and society of origin and commitment or self-identification with the host culture and society, achieved by an individual after migration. In our definition we do not restrict ethnic identity to any specific type of the relationship between commitment to the origin and commitment to the host country. We conjecture that an immigrant moves along a plane formed by two positive vectors normalized from 0 to 1, with 1 representing the maximum commitment: on the horizontal axis we measure commitment to and self-identification with the country of origin, and on the vertical axis we measure commitment to and self-identification with the host country. This two-dimensional model allows for the trade-off between commitment to one or the other country in any possible combination.

Figure 1 applies this concept to a special case. In this one-dimensional but continuous model one assumes a one-to-one correspondence. That is, at any time, the commitments are linearly dependent and mutually exclusive and they sum up to one. In this case, the more an individual commits to one country the less he commits to the other. This linear representation is depicted by a movement along the diagonal (1,0) to (0,1). We call this measurement of ethnic content, the one-dimensional *ethnosizer*. Immigrants with maximum commitment to the origin - point (1,0) - are 'ethnic,' because they did not change their identification with the ethnicity of origin after they changed the country of residence. On the vertical axis, as immigrants move from 0 to 1, they lose commitment to values and beliefs of the country of origin, and achieve maximum commitment to the host society. We assume that individuals with this combination of commitments have ethnic identification similar to that of natives. Point (0,1), for example,

denotes full adaptation of and identification with the culture of the host country. Such a linearity of the relationship between the commitments to two societies is comfortable for empirical research because it allows measuring the immigrants' ethnic identity even when information on the commitment is only available for one country.

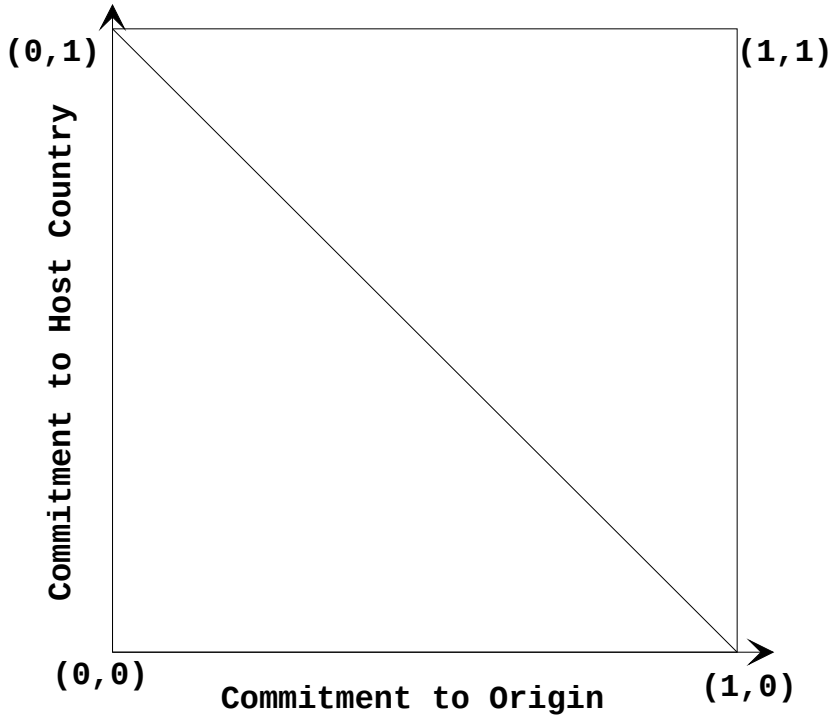

Figure 1. The *ethnosizer* as a one-dimensional understanding of ethnic identity

However, immigrants may exhibit strong association and commitment to both the culture of ancestry and the host culture. The two-dimensional model of the measurement of ethnic identity suggests that commitments to two different societies can coexist and influence each other. In other words, the level of dedication to the origin does not influence the degree of the immigrants' commitment to the host society. This assumption recognizes that an immigrant who strongly identifies with the culture and values of his ancestry may or may not have a strong

involvement with the dominant culture. Similarly an immigrant with a strong relation to the values and beliefs of the host country may or may not strongly identify with the culture of ancestry (e.g., Laroche et al., 2005). At the same time, immigrants may also be completely detached from the home or host countries. Our two-dimensional model allows for this case as well.

The two-dimensional model of ethnic identity helps to define the strength of dedication to both the origin and the host cultures. We call the measurement of this ethnic identity the two-dimensional *ethnosizer*. As illustrated in Figure 2, there are four states of ethnic identity, differentiated by the strength of cultural and social commitments. The quadrants A, I, M, and S correspond to: *Assimilation* (A), a strong identification with the host culture, coupled with a firm conformity to the norms and codes of conduct, and a weak identification with the ancestry; *Integration* (I), achieved when an individual exhibits both strong dedication to his origin and commitment and conformity to the host society; *Marginalization* (M), occurring from a weak dedication to or strong detachment from either the dominant culture or the culture of origin; and, *Separation* (S), an exclusive commitment to the origin even after years of emigration, paired with weak involvement in the host culture and country realities. Starting at point (1,0), a migrant can undergo a more complicated journey through the various states, leaving separation towards integration, assimilation or marginalization, or remaining separated all measured by the two-dimensional ethnosizer.

Our two-dimensional understanding of ethnic identity is similar to the two-dimensional concept of acculturation. In 1932 Richard Thurnwald defined the four rhythms of acculturation: withdrawal, imitation, "death of ethnic nations" and recovery. The more recent major contributor to the theory of acculturation, Berry (1980), defines acculturation as a process which incorporates

the maintenance or loss of the culture of origin and gaining of the culture and relationship with other groups. He also insists that devotion to the culture of origin and devotion to the culture of other groups are two independent concepts. In Figure 2 we lay our rationale of the two-dimensional model of the relationship between commitments to different cultures and societies similar to Berry et al. (1989). However, unlike Berry, we do not define the exact relationship between the exhibited involvement with the culture or origin and the culture of the host society in our understanding of ethnic identity. Thus our concept of ethnic identity is closer to Berry's (1980) acculturation when ethnic identity is thought in terms of the two-dimensional model.

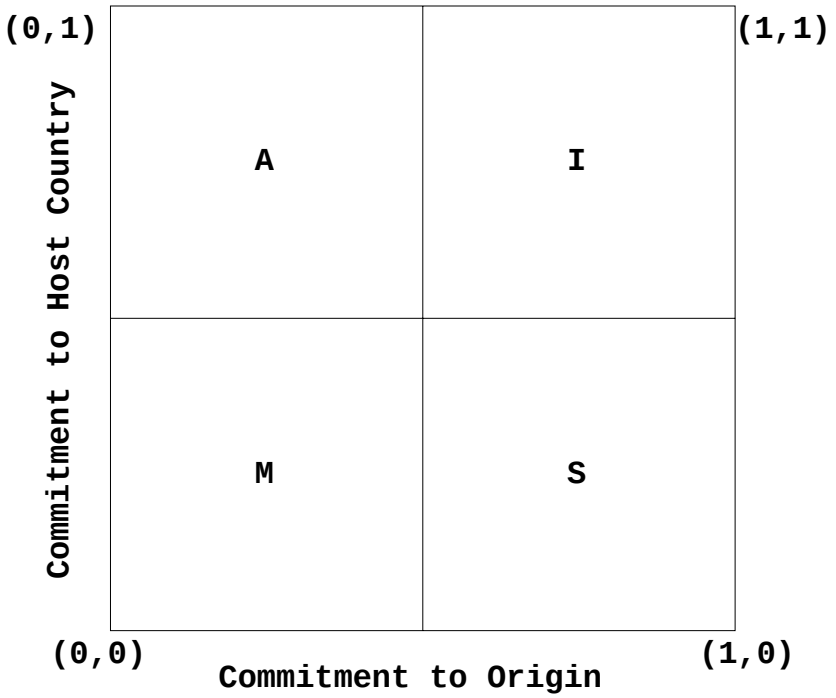

Figure 2. The *ethnosizer* as a two-dimensional understanding of ethnic identity

To summarize: Ethnicity is what people are since they were born in their home country. Ethnic identity is the balance between commitment to or self-identification with

the culture and society of origin and commitment to or self-identification with the host culture and society, achieved by an individual after migration. Whereas ethnicity is a permanent characteristic and a static concept, ethnic identity is dynamic and may evolve in several directions. We are interested in measuring the intensity of ethnic identity of migrants after immigration. We call the measure or the measurement concept *ethnosizer*; its construction will be detailed in the next section. The objective is to parameterize the e*thnosizer* and estimate these parameters for the one-dimensional and two-dimensional variants using individual data from migrants of different ethnicities. We also define the word *ethnosize* as containing a higher quantity of commitment to, devotion to, or self-identification with the own ethnicity.

3. Data Set and Variable Description

3.1 The Sample

Our empirical analysis uses data from the German Socio-economic Panel (GSOEP), a nationally representative dataset collected annually since 1984 (e.g., SOEP Group, 2001). The 2000, 2001 and 2002 waves contain the most relevant information to our quest of measuring immigrants' ethnicity. We therefore limit our sample to respondents who participated in all three waves, while we choose the year of 2001 as the base year of observation. That is, if information is not available in 2001, we use information from the years 2000 or 2002. Many of the questions from the GSOEP 2000-2002 which are relevant to our research interests were asked only to those respondents whose nationality is not German. Consequently, we limit our sample to non-German nationals only. We also exclude from our sample the German-born immigrants, since we want to

focus on the adjustment effects among (first-generation) immigrants. All in all, our sample consists of 1,400 individuals.

In Table 1 we present the summary statistics of our sample. There are slightly less women (49%) among our sampled immigrants, and the age of the respondents varies between 18 and 80 with the average being 45 years. Over a third of the immigrants in the sample is Muslims, and about another third is Catholic. Most immigrants have either vocational or secondary education in their home countries. Over 40% of the sample did not receive adequate education in the country of origin, which could partially be explained by the young average age (about 22 years) at the time of immigration. Only about 6% of the respondents in the sample came to Germany with at least college level education in the home country. Almost 50% of the sample received post secondary non-university level education either in the home country or in Germany, and 23% of immigrants have secondary education. Yet, 19% of the sampled individuals did not receive adequate education, and only 8.5% of immigrants obtained at least college level education either in Germany or in the country of origin.

The selected sample is representative of all major ethnic groups of immigrants, who live in Germany: Turks, Greeks, Italians, Spaniards, and people from the former Yugoslavia. We classify immigrants by ethnicity according to their country of origin. Turks form the largest ethnic group (34.8%) followed by the ex-Yugoslavs (17.8%), the Italians (15.3%), the Greeks (8.5%) and the Spaniards (3.6%). Immigrants from other ethnicities are 18.4% of our sample.

3.2 Construction of the Dependent Variables

To generate the measurement of ethnic identity as a linear construct of immigrants' commitment to the culture and society of origin and devotion to the host society, we select variables with

information on personal attachment to the German culture and society. According to the one-dimensional model, this information is enough to also define the immigrants' commitment to their origin, and therefore, to estimate their ethnic identity. We classified the selected variables into the five element categories defined earlier. Column 1 of Table 2 contains the specific variables and classification by factor group.

We then assigned a value to all answers options that a respondent was offered to choose from in order to reply to each stated question. That is, '1' corresponds to an answer indicating the least commitment to the German culture and '0' to an answer demonstrating the most commitment to the German culture. If an individual indicates a 'very good' knowledge of spoken German, for example, he receives a value of 0 on this particular question. Following the same logic, the value of 'good' knowledge of German scores 0.25, 'fair' knowledge of German scores 0.5, 'poor' knowledge of German scores 0.75, and 'none at all' knowledge of German scores 1. In the linear model, the person who receives 1 demonstrates the most linguistic identification with the origin, and is linguistically ethnic. On the other hand, an individual, who scores 0 on the same question, is linguistically identical to native 'Germans' and has lost his ethnic identification with the language. A similar procedure was performed on all other variables from the five factor groups.

From the mean value of answers that a respondent gave to the questions from each category of factors, we generated the following five variables: *Language*, which is the mean assigned value of the respondents' answers to the questions on the 'language use' category; *Cultural elements*, which is the mean assigned value of answers to the questions on the 'visible cultural elements' category; *Interaction*, which is the mean assigned value of answers to the questions on the 'ethnic interaction' category; *Self-identification*, which is the mean assigned

value of answers to the questions on the 'ethnic self-identification' category; and *Migration history*, which is the mean assigned value of answers to the questions on the category 'migration history.' The one-dimensional *ethnosizer* is the mean assigned value of answers to the questions from all five categories. The variables language, cultural elements, interaction, self-identification and migration history are mini-scales, sizing the ethnic identity of immigrants by a specific factor of ethnic identity. The one-dimensional *ethnosizer*, however, can be viewed as a super-scale, sizing the ethnic identity of individuals using all factors of this concept. All five scales measure ethnic identity as a continuous variable bounded to an interval between 0 and 1. The closer the value of the measured ethnic identity is to 0 the less commitment to the origin it indicates, and the closer it is to 1 the less the immigrant's devotion and commitment to the host society is.

To measure ethnic identity by the two-dimensional *ethnosizer*, we need information on commitments to both the host and home societies and cultures. We identified questions that helped us compare a personal devotion to German culture and society with the commitment to the culture and people of origin. In most cases we paired each variable indicating commitment to German culture with a variable measuring a similar aspect of commitment to the culture of origin. The pairing was not required for the variable in the 'cultural elements' factor group, because the construction of the variable alone allowed evaluating the strength of commitment to the German media, and the media from the country of origin. Column 2 of Table 2 displays the list of variables used to measure ethnic identity in the two-dimensional model.

Following our rationale depicted in Figure 2, we identified the status of the immigrants' ethnic identity by each group of elements. A respondent with a 'very good' or 'good' command of both German and the language of origin was classified as linguistically integrated; a respondent with good command of German and bad or no command of the language of origin is considered

linguistically assimilated; a respondent with 'very good' or 'good' command of the language of origin, and 'fair' or worse command of German is labeled linguistically separated; and, finally, a person with a bad command of both languages is classified as linguistically marginalized. Similarly, people who equally prefer the German media and the media of their country of origin are culturally integrated; those who are only involved in the German media are culturally assimilated, the readers of media only from the country of origin are culturally separated, and those who do not read any media are culturally marginalized. We performed the same operation of transformation and classification on the variables of preferences in ethnic interaction, self-identification, and migration history.

Classifying immigrants as strictly integrated, assimilated, separated or marginalized in all five aspects, as suggested in earlier works on ethnic identity or acculturation, can be delusive. A person can be culturally and linguistically integrated into the German society, but may still have no friends in Germany, or can strongly identify with his home country. In fact, in our sample there are only very few immigrants who are identified as assimilated or separated in all five factor groups of ethnic identity and no one at all who is identified as integrated or marginalized in all groups. In most cases the respondents' content of ethnic identity varied across the factor groups.

Yet, with our technique, it is possible to discuss the status of ethnic identity in comparative terms. For example, if respondent A is identified as assimilated in terms of language, culture, and self-identification and respondent B is identified as assimilated only in terms of self-identification, then respondent A is generally more assimilated than respondent B. If, on the other hand, respondent B is identified as separated in more factor groups than respondent A he could be considered as more separated than respondent A. Therefore, we

generated the following four dependent variables that measure the ethnic identity of immigrants: (i) *integration* is the number of times that each respondent is identified as 'integrated' in all five factors groups of ethnic identity; (ii) *assimilation* is the number of times that each respondent is identified as 'assimilated' in all five groups; (iii) *separation* is the number of times that each respondent was identified as 'separated' in all five groups; and (iv) *marginalization* is the number of times that each respondent was identified as 'marginalized' in all five groups. Each of these four variables can take a value between 0 and 5, and for each immigrant they sum up to five.

The descriptive statistics in Table 1 reflect some interesting patterns of our one- and two-dimensional *ethnosizers*. Based on the mean value of the one-dimensional *ethnosizer* (0.492), the immigrants in our sample demonstrate about the same commitment to the culture of the host society than to the culture of origin - with a really marginal advantage for the host society. However, the average immigrant in our sample demonstrates stronger separation (1.9), than integration (1.2), assimilation (1.1) or marginalization (0.9). According to these measures (the two-dimensional *ethnosizer*), immigrants in Germany demonstrate a stronger commitment to the culture and society of origin than to the host country. While these observations are somewhat conflicting at first sight, they are the direct consequence of the differences in the dimension of observation and the depths of measurement. Not surprisingly, the one-dimensional *ethnosizer* overestimates the adaptation of immigrants to the host country.

3.3 Distribution of the Measurements of Ethnic Identity

Table 3 presents the mean distribution of our key measurements of ethnic identity by ethnicity, gender and religion. On average, immigrants of any ethnic, gender or religious group are more likely to exhibit commitment to either the German culture and society, or to the society and

culture of the origin, than not to exhibit any commitment at all. Marginalization is a weak phenomenon among immigrants in Germany. The average ethnic, religious, or gender group demonstrates marginalization in less than one factor of ethnic identity.

Turkish immigrants exhibit the strongest identification with their origin, and the weakest identification with the German culture and society, in both the one- and two-dimensional models of ethnic identity. Individuals of Turkish ethnicity are the only ethnic group of immigrants in our sample whose mean score on the *ethnosizer* is significantly higher than the sample average score. This indicates that Turks have more commitment to the country of origin, or less than average devotion to the German society. Moreover, on average, Turkish immigrants manifest the lowest level of either integration or assimilation and the highest level of separation among all ethnic groups. This can be interpreted as the Turks' strong commitment to the culture of ancestry and weak devotion to German society.

To the contrary, Spanish immigrants demonstrate the strongest average commitment to the German culture and society among all other major groups of immigrants in Germany. Spanish respondents scored the lowest on the *ethnosizer*, and therefore are on average less ethnic than any other major immigrant group in Germany. They also exhibit the highest integration and, along with former-Yugoslavs, the lowest separation from the German society.

Table 3 also indicates that Muslims in our study have a pattern of cultural and social commitment which is very similar to the pattern of cultural and social devotion of Turks, while the Catholics' pattern of cultural devotion resembles that of the Spaniards. For instance, Muslims score, on average, as high on the *ethnosizer* as Turks do. Also, Muslims demonstrate as strong of a separation as individuals of Turkish ethnicity but slightly stronger assimilation, and much lower integration than them. Similar to Spaniards, Catholics score low on the *ethnosizer*, and exhibit

stronger integration and assimilation, and lower separation than Muslims do. Because most Turks are Muslims and most Spaniards are Catholic, the question which is relevant here and which we will answer in our further statistical analyses is whether it is the ethnicity of immigrants or their religion that defines the cultural and social commitment to the origin and to the host society.

Lastly, we find that immigrant women are, on average, slightly more committed to the culture and society of the country of origin than men are. As Table 3 shows, the average immigrant woman is not only a little bit more ethnic but also demonstrates less integration or assimilation and more separation than men do.

4. Quantifying Ethnic Identity

We now turn to the econometric investigation of our measures of ethnic identity. Table 4 contains the ordinary least squares (OLS) regression results[2] of the one-dimensional *ethnosizer* and its components, namely language, culture, interaction, history, and self-identification. This exercise pertains to the one-dimensional model of ethnic identity, and shows how "ethnic" immigrants are according to their characteristics. Note that the reference individual is a Turk, non-religious, male, with no education in the home country. Column 6 shows that, overall, the expressed affiliation and affinity of immigrants with the host country is smaller the older a person is upon arrival in Germany. Put differently, for each additional year one arrives older the ethnic identity towards the home country is larger, albeit at a decreasing rate. Females, Muslims, those from other religions, and those with schooling in the home country remain more ethnically attached than the reference group, while Catholics are less. Controlling for all regression determinants (especially religion), we find that Italians, Spaniards and Greeks (in this order)

[2] We present here and in the sequel only OLS regressions, since these findings are pretty consistent with the more complex logit and limited-dependent variable models we examined.

continue to have a stronger ethnic identity than Turks and immigrants of other ethnicities. Ex-Yugoslavs are no different than Turks. However, the estimation results suggest that Turkish (and ex-Yugoslav) Muslims maintain a much stronger ethnic identity than Greek, Italian, or Spanish Catholics.

The analysis on the components of the *ethnosizer* exhibits a much more complex picture. The affiliation with German as the native language, and the relative use of the language of ethnic origin is of central concern in scientific research and in the political debate, since the ability of language use is positively associated with labor market success (Chiswick, 1991; Chiswick and Miller, 1996, 2002; Esser, 2006). Column 1 of Table 4 basically mimics the findings of the general one-dimensional *ethnosizer*, although the estimated significant parameters are mostly larger in absolute terms. In addition, college and higher education in the home country leads to a stronger affiliation with German, and age at entry is less relevant for ethnic identity the older the individual is upon arrival. Again, we find that Italians, Spaniards and Greeks remain more linguistically ethnic than Turks and other ethnicities. Cultural ethnic identity as analyzed in Column 2 of Table 4 displays a similar structure to language, while most effect parameters are smaller in absolute size. An exception is the parameter estimate on the ex-Yugoslavs, which indicates a stronger affiliation of ex-Yugoslavs with the culture of the host country than the Turks.

Exposure to German nationals and people of the own ethnic group (interaction), and to the host or home country (migration history) is analyzed in Columns 3 and 4 of Table 4. The slope coefficients are all-in-all flatter than in the case of the general ethnosizer, if they are significant at all. While Muslims interact more with their own people, Catholics interact less in comparison to non-religious individuals. Low levels of education result in a stronger attachment

to individuals from their own ethnicity. Other things equal, we find that Italians and ex-Yugoslavs remain more ethnic in their interaction with people than Turks, Spaniards, Greeks and other ethnicities. The migration history ethnosizer, which measures the attachment to the host country and nationality, exhibits the only statistically significant interaction with age among all measures; however, the effect of age at entry is small. The attachment to the host country increases with age and among Catholics, while it decreases with college and higher education in the home country. Quite surprisingly, Turks have the strongest attachment to the host country among all ethnic groups. This may be explained by a limited willingness to return to Turkey, either because of difficulties to adjust back home or to return to Germany. It could also be related to the fact that living in a large ethnic enclave of the largest immigrant community in Germany moderates the pressure for ethnic adjustment.

The individual self-expression of ethnic identity finally provides once again a somewhat similar picture to the general *ethnosizer*. As the estimates in Column 5 of Table 4 suggest, the individual affiliation of migrants with the host country is smaller the older a person is upon arrival in Germany. Muslims and those with some school education remain more ethnic than the reference group, while Catholics are less. Spaniards and Italians remain more ethnic based on self-identification than Greeks, Turks, ex-Yugoslavs, and other ethnicities.

Across all indicators, this analysis provides rough predictions of ethnic integration into the host country's ethnicity: The attachment is smaller among females, Muslims, with basic education, and with every extra year of age upon arrival in the host country, but larger among Catholics. Other things equal, and as a tendency, Greeks, Italians and Spaniards are more attached to their own ethnicity than the Turks as a reference group. However, the ex-Yugoslavs provide a more complex picture: They are more attached to people of their own ethnicity and

their home country than the Turks, but they are closer to the German culture and provide less ethnic self-identification.

We now move over to the analysis of our two-dimensional model of ethnic identity. This approach enables us to differentiate between integration, assimilation, separation and marginalization of the ethnic groups. Regression results are again OLS estimates and presented in Table 5. As before, the reference individual is male, non-religious, Turkish, and with no education in the home country. Against this reference, females are no different in all four categories of the ethnosizer. Age at entry matters: it decreases the scores for integration and assimilation, and increases the scores for separation and marginalization; the effect is linear for integration only, while it is moderated with higher age at entry in the other three cases. Age in general does not affect the strength of integration or assimilation at all, but it is negatively associated with separation and positively connected with marginalization. Younger immigrants are more likely to assimilate or integrate. The older individuals are upon arrival, the less probable is separation or marginalization in the host country; while separation becomes even less likely with rising age, marginalization becomes stronger.

As it turns out, religion is a decisive indicator for the evolution of the components of ethnic identity in the two-dimensional model. Muslims are less likely to integrate and are more often separated and marginalized. Catholics are also integrating less than other Christians and nonreligious individuals, but they are strongly more assimilated and strongly less separated than the reference group. Christians in general exhibit more marginalization in comparison to non-religious individuals, but are less marginalized than Muslims and people from other religions. If assimilation is the central goal, then Catholics or other Christians are the preferred groups; if

integration is the required level of performance, then non-religious individuals outperform the Christians.

Vocational education in the home country has no effect on any of the different channels of the evolution of ethnic identity of immigrants. Other forms of education at home, however, exhibit a differentiated impact. School education before emigration (complete or incomplete) leads to higher levels of separation; the effects are stronger with incomplete schooling than with complete schooling both in comparison to no education. Integration is strongest among those immigrants with college and higher education in the home country; those individuals are prepared best to adapt to the home country ethnicity while keeping ties to their old ethnic identity. Next are those with no education, followed by immigrants who had complete schooling before migration. The lowest scores concerning integration are observed by immigrants with incomplete education in the home country. Finally, individuals with no education in the home country assimilate best. Second in the assimilation category rank those with college and higher education, followed by those with complete schooling in the home country leaving those with incomplete schooling behind.

The effects of ethnic origin are covered by parameters for country of origin dummies, which need to be interpreted with respect to the Turkish reference group. Marginalization is observed only with respect to the ex-Yugoslavs, who are also no different than the Turks with respect to separation, assimilation or integration. Separation is stronger for Greeks, Italians and Spaniards than for the Turks, and less strong for the other ethnicities in our sample. Turks assimilate better than Greeks, Italians and Spaniards, are similar to ex-Yugoslavs, and assimilate less than the other ethnicities. Finally, Italians and Spaniards integrate less than the others.

While we have found that religion is a decisive production factor in the process of ethnic adjustment, the country of origin dummies still suggest larger differences in ethnic identity according to nationality and ancestry. This implies that ethnicity measured by country of origin cannot be reduced to religious factors. Expressed differently, religion has an independent impact on an individual's ability to adjust into another ethnicity, and this might be related either to the particular characteristics of the religion or to its closeness to the dominant religion in the host country.

5. Summary and Conclusions

In this paper we investigated migrant ethnicity and the evolution of ethnic identity during residence in the host country. To operationalize ethnic identity we established five groups of factors: language use, cultural aspects, ethnic networks, migration history, and ethnic self-identification. Using these factor groups, a linear continuous representation of ethnic identity measures devotion to the host society and commitment to the origin on a scale from zero to one, which we call the one-dimensional *ethnosizer*. A two-dimensional *ethnosizer* allows us to distinguish between integration, assimilation, separation and marginalization of migrant ethnic identity. Using data from the German Socio-economic Panel, we then calibrate the various measures and investigate their relationship to age, age at entry, religion, educational levels, and ethnic origin.

Females are more apart from the native ethnicity in Germany than males, and this result is caused by a low attachment concerning language use and cultural aspects. Catholics adapt stronger to the ethnicity of the host country, while Muslims adjust less. Completed and incomplete schooling in the home country keeps migrants ethnic and inflexible towards

adjustment. College and higher education in the home country lead to a stronger language use of German, but have no statistically significant effect on the general one-dimensional *ethnosizer*. In the two-dimensional model, young migrants are integrated or assimilated the best. Muslims do not integrate, while Catholics and other Christians assimilate well. Immigrants with college degree or higher education in the home country integrate well, but they do not assimilate. School education, whether complete or incomplete, is more harmful for the process of integration or assimilation than no education. Throughout this analysis, the ethnic origins of the individuals, measured by dummy variables of the countries of origin, remain statistically different from zero.

These findings have important implications for migration policy. Gender differences are not significant in the two-dimensional model. Preference should be given to young migrants with college degrees or higher education in the home country. Religion is a powerful indicator of the evolution of ethnic identity: Muslims are difficult to integrate, and they have a tendency for marginalization and separation in the host country. Catholics, to the contrary, assimilate well and exhibit a small level of separation.

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Table 1. Descriptive Sample Statistics

Variable	Mean	Standard Deviation
Female	0.491	0.500
Age	45.062	13.956
Age at entry	22.587	11.034
Muslim	0.341	0.474
Catholic	0.308	0.462
Other Christian	0.272	0.445
Other religions	0.035	0.184
Non-religious	0.044	0.206
Have at least college in the home country	0.058	0.234
Have vocational training in the home country	0.270	0.444
Have completed schooling in the home country	0.245	0.430
Have incomplete schooling in the home country	0.151	0.358
Have no education degree from the home country	0.276	0.447
University	0.085	0.279
Post secondary non-university degree	0.496	0.500
Primary secondary	0.229	0.420
No education	0.191	0.393
Turkish	0.348	0.476
ex-Yugoslav	0.178	0.383
Greek	0.085	0.279
Italian	0.153	0.360
Spanish	0.036	0.187
Other ethnicity	0.184	0.387
One-dimensional ethnosizer	0.492	0.171
Integration	1.190	0.999
Assimilation	1.078	1.083
Separation	1.874	1.389
Marginalization	0.857	0.889

Table 2. Five Elements of Ethnic Identity that Compose the Ethnosizer

One-dimensional model	Two-dimensional model
(1)	(2)
Language	*Language*
Own opinion of Spoken German	Own opinion of Spoken German
Own opinion of written German	Own opinion of written German
Language mostly used in Germany	Own opinion of Spoken language of origin
	Own opinion of written language of origin
Culture	*Culture*
Preferred media	Preferred media
Preferred music	
Cooked meals	
Ethnic self-identification	*Ethnic self-identification*
Self-identification as German	Self-identification as German
	Self-identification with the country of origin
Ethnic interaction	*Ethnic interaction*
Ancestry of three closest friends	Ancestry of three closest friends
Paid visits to Germans during the last year	
Received visits from Germans during the last year	
Family abroad	
German spouse	
Migration history	*Migration history*
Wish to remain in Germany permanently	Intend to apply for German Citizenship
Trips to the country of origin	Return to the country of origin

Table 3. Distribution of the One- and Two-dimensional Ethnosizer by Ethnicity, Gender, and Religion

	One-dimensional	Two-dimensional			
	Ethnosizer	Assimilation	Integration	Marginalization	Separation
Ethnicity					
Turkish	0.565	0.779	1.032	0.896	2.293
	(0.007)	(0.045)	(0.046)	(0.043)	(0.063)
ex-Yugoslavian	0.487	1.097	1.203	0.919	1.780
	(0.010)	(0.066)	(0.062)	(0.060)	(0.085)
Greek	0.499	0.897	1.121	0.914	2.069
	(0.014)	(0.083)	(0.095)	(0.083)	(0.132)
Italian	0.475	1.069	1.162	0.858	1.912
	(0.011)	(0.080)	(0.065)	(0.064)	(0.096)
Spanish	0.457	1.122	1.388	0.714	1.776
	(0.024)	(0.145)	(0.162)	(0.109)	(0.213)
Other	0.420	1.541	1.415	0.768	1.276
	(0.011)	(0.069)	(0.064)	(0.052)	(0.074)
Gender					
Female	0.503	1.032	1.152	0.898	1.918
	(0.007)	(0.041)	(0.040)	(0.036)	(0.055)
Male	0.481	1.123	1.227	0.818	1.832
	(0.006)	(0.042)	(0.038)	(0.033)	(0.053)
Religion					
Muslim	0.563	0.862	0.929	0.946	2.262
	(0.007)	(0.047)	(0.044)	(0.043)	(0.064)
Catholic	0.440	1.293	1.244	0.822	1.641
	(0.008)	(0.058)	(0.046)	(0.043)	(0.068)
Other Christians	0.506	1.039	1.109	0.869	1.983
	(0.005)	(0.035)	(0.031)	(0.029)	(0.045)
Other religion	0.489	1.094	1.192	0.855	1.859
	(0.005)	(0.030)	(0.028)	(0.025)	(0.039)
No religion	0.492	1.083	1.173	0.871	1.872
	(0.004)	(0.030)	(0.028)	(0.025)	(0.039)
Mean	0.492	1.078	1.190	0.857	1.874
	(0.005)	(0.030)	(0.027)	(0.024)	(0.034)

Note: Standard deviations in parenthesis

Table 4. OLS of One-dimensional Measurements on the Immigrants' Ethnic Identity

	Language	Culture	Interaction	History	Self-identification	Ethnosizer
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.143	0.366***	0.545***	0.780***	0.571***	0.481***
	(0.77)	(2.62)	(3.51)	(3.66)	(2.76)	(4.15)
Age	-0.003	0.0005	0.008	-0.045***	-0.009	-0.010
	(-0.24)	(0.05)	(0.72)	(-3.10)	(-0.64)	(-1.24)
Age^2	2.91E-05	-2.2E-05	-0.0002	0.001***	0.0002	0.0002
	(0.11)	(0.11)	(-0.96)	(3.36)	(0.68)	(1.23)
Age^3	-3.11E-07	2.04E-07	1.78E-06	-8.18E-06***	-1.98E-06	-1.70E-06
	(-0.16)	(0.14)	(1.12)	(-3.76)	(-0.93)	(-1.44)
Age at entry	0.019***	0.007***	0.003*	0.002	0.006**	0.007***
	(8.76)	(4.52)	(1.66)	(0.73)	(2.45)	(5.50)
Age at $entry^2$	-0.0001***	-0.0001***	-1.2E-05	0.0001*	1.72E-06	-2.8E-05
	(-3.66)	(-2.75)	(-0.40)	(1.78)	(0.04)	(-1.28)
Female	0.041***	0.037***	-0.008	-0.008	0.021	0.017**
	(3.05)	(3.65)	(-0.70)	(-0.5)	(1.39)	(1.99)
Muslim	0.141***	0.129***	0.048*	-0.049	0.070*	0.068***
	(4.19)	(5.10)	(1.72)	(-1.26)	(1.85)	(3.23)
Catholic	-0.063*	-0.070**	-0.101***	-0.089**	-0.079**	-0.081***
	(-1.81)	(-2.66)	(-3.46)	(-2.22)	(-2.02)	(-3.69)
Other Christian	-0.021	-0.019	-0.031	-0.057	-0.028	-0.031
	(-0.62)	(-0.74)	(-1.08)	(-1.46)	(-0.74)	(-1.47)
Other religion	0.103**	0.087**	0.028	0.010	0.067	0.059**
	(2.19)	(2.47)	(0.71)	(0.18)	(1.29)	(2.02)
College and higher education in the home country	-0.093***	0.003	-0.018	0.086**	0.069*	0.009
	(-2.65)	(0.13)	(-0.62)	(2.14)	(1.76)	(0.43)
Vocational training in the home country	-0.023	0.013	-0.001	0.008	0.032	0.006
	(-1.04)	(0.77)	(-0.04)	(0.30)	(1.28)	(0.41)
Complete schooling in the home country	0.090***	0.057***	0.032*	0.034	0.070***	0.057***
	(4.18)	(3.52)	(1.77)	(1.39)	(2.92)	(4.22)
Incomplete schooling in the home country	0.131***	0.080***	0.099***	0.038	0.101***	0.090***
	(5.37)	(4.37)	(4.88)	(1.35)	(3.71)	(5.91)
ex-Yugoslav	0.020	-0.043***	0.035**	0.086***	-0.038*	0.012
	(1.00)	(-2.90)	(2.16)	(3.85)	(-1.72)	(1.00)
Greek	0.068**	0.039*	-0.007	0.120***	0.049	0.054***
	(2.36)	(1.81)	(-0.31)	(3.64)	(1.52)	(2.99)
Italian	0.127***	0.058***	0.044**	0.083***	0.070**	0.076***
	(4.92)	(3.00)	(2.03)	(2.80)	(2.44)	(4.75)
Spanish	0.076*	0.007	0.001	0.148***	0.112**	0.069***
	(1.92)	(0.24)	(0.02)	(3.28)	(2.57)	(2.81)
Other ethnicities	-0.137***	-0.137***	-0.135***	0.053**	-0.049**	-0.081***
	(-6.56)	(-8.72)	(-7.71)	(2.20)	(-2.12)	(-6.22)
Adjusted R^2	0.350	0.314	0.194	0.071	0.098	0.286
Number of observations	1,254					

Note: t-ratios in parenthesis
* significant at 10%, ** significant at 5%, *** significant at 1% (two-tail test)

Table 5. OLS of Two-dimensional Measurements on the Immigrants' Ethnic Identity

	Integration	Assimilation	Separation	Marginalization
	(1)	(2)	(3)	(4)
Constant	1.283*	2.640***	2.373**	-1.296*
	(1.70)	(3.36)	(2.38)	(-1.85)
Age	0.053	-0.046	-0.130*	0.122**
	(1.04)	(-0.86)	(-1.92)	(2.57)
Age^2	-0.001	0.001	0.003**	-0.003***
	(-0.79)	(0.82)	(2.06)	(-3.00)
Age^3	4.84E-06	-6.43E-06	-0.00002**	0.00003***
	(0.63)	(-0.80)	(-2.27)	(3.44)
Age at entry	-0.032***	-0.052***	0.066***	0.019**
	(-3.61)	(-5.63)	(5.60)	(2.25)
Age at $entry^2$	0.0002	0.001***	-0.001***	-0.0003**
	(1.04)	(4.39)	(-2.76)	(-2.12)
Female	-0.007	-0.089	0.066	0.030
	(-0.13)	(-1.57)	(0.92)	(0.59)
Muslim	-0.634***	-0.073	0.303*	0.404***
	(-4.55)	(-0.50)	(1.65)	(3.13)
Catholic	-0.298**	0.575***	-0.528***	0.250*
	(-2.06)	(3.83)	(-2.77)	(1.86)
Other Christian	-0.154	0.245*	-0.343*	0.252*
	(-1.08)	(1.66)	(-1.84)	(1.91)
Other religion	-0.373**	-0.262	0.270	0.364**
	(-1.93)	(-1.31)	(1.06)	(2.04)
College and higher education in the home country	0.348**	-0.306**	0.082	-0.123
	(2.46)	(-2.08)	(0.44)	(-0.94)
Vocational training in the home country	0.101	-0.146	0.130	-0.085
	(1.11)	(-1.55)	(1.09)	(-1.01)
Complete schooling in the home country	-0.158*	-0.412***	0.607***	-0.037
	(-1.8)	(-4.52)	(5.26)	(-0.46)
Incomplete schooling in the home country	-0.423***	-0.568***	0.821***	0.170*
	(-4.26)	(-5.50)	(6.27)	(1.85)
ex-Yugoslav	-0.063	-0.069	-0.015	0.148**
	(-0.80)	(-0.83)	(-0.15)	(2.00)
Greek	-0.371***	-0.283**	0.488***	0.167
	(-3.16)	(-2.32)	(3.15)	(1.53)
Italian	-0.258**	-0.388***	0.544***	0.103
	(-2.45)	(-3.54)	(3.91)	(1.05)
Spanish	-0.056	-0.410**	0.446**	0.019
	(-0.35)	(-2.48)	(2.14)	(0.13)
Other ethnicity	0.095	0.458***	-0.635***	0.082
	(1.11)	(5.17)	(-5.66)	(1.03)
Adjusted R^2	0.138	0.194	0.243	0.041
Number of observations	1,223			

Note: t-ratios in parenthesis
* significant at 10%, ** significant at 5%, *** significant at 1% (two-tail test)