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VOCATION OF LANGUAGE FOR INTERNATIONAL COMMUNICATION – A PREDICTION TOOL FOR FUTURE EVOLUTIONS IN GLOBAL COMMUNICATION

Empirical study

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Abstract

The paper proposes a new perspective that explains the convergence toward an increasingly smaller number of languages in communication between speakers of different native languages: the "vocation of language for international communication". For the population of a country, the exposure to its official language by implicit interaction with it makes that the majority of citizens understands this language. Correlating the populations of these countries with the spread of these languages by countries and continents generates a hierarchy of languages, at global or regional level. English has the strongest vocation of language for international communication at global level, followed by French and Spanish, while Russian and Arabic have strong vocation only at regional level. Chinese has only a medium vocation at regional level, as German, Portuguese, Italian and Dutch. 23 languages officially spoken at least 2 countries and other 88 official languages of a sole country are grouped in 5 clusters, by their vocation of language for international communication.

INTRODUCTION

Language is the basic vector of communication, the communication developing and shaping the languages, throughout human history. The natural tendency of humans is to communicate in their own language, the most comfortable for self-expression, but also to understand others (Lai, Lin & Kersten, 2010). Contemporary age increases the need to interact with people, companies (or the products / services thereof) that may belong to different cultures and communicate in different languages, surpassing the country's borders. Among the diversity of tools for achieving this cross-cultural communication, using an international language gained ground. The choice of a common tongue of communication is influenced by the context of communication, but also by the social, cultural or economic backgrounds of the communicators' origin environment.

The multitude of world countries and the large number of official languages has been a challenge for international organizations. Development of international trade and increasing role of global organizations has boosted the trend towards simplification of communication. One solution to reduce the number of languages of the nations at the core of the main language was adopted by the United Nations, which rules six official languages for its works: Arabic, Chinese, English, French, Russian and Spanish (United Nations, 1992). Another solution generated by the global spread of multinational business structures, commonly called "corporations", which assume either the language of the company's country of origin, or a neutral language that allows communication between employees of different cultures. Many companies try to address their target countries by as few languages as possible, and some rely in doing so on English as unique language, which is being used at international level, while others are using many languages to reach as many dialogue groups as possible in their local language, adopting a multilingual option (Grosseck, 2012; Grin, Sfreddo & Vaillancourt, 2013).

The large movement of people and goods over the globe brings together people from different linguistic and socio-cultural backgrounds, with the result that a common language of communication is frequently adopted (Rogerson-Revell, 2007). Such a common communication language could promote trades (Baker, 2001), and at least two thirds of the influence of language comes from ease of communication alone (Melitz & Toubal, 2014).

If the choice for an official/working language of an international institution is based on geo-political reasons, the choice of a multinational corporation for a local language that becomes an international language is conducted by the corporation's business interests (Andersen & Rasmussen, 2004; Louhiala-Salminen & Kankaanranta, 2012).

The prediction of the dynamics in the international languages preferences is helpful for the political, business or academic environments. The exploration age and lately the colonial epoch was closed after the 2nd World War, and the ten most spoken languages in the world have their expansion origin in this ages: English, French, Spanish, Portuguese and Russian was colonial languages, whilst Chinese, Malay, Hindi or Bengali are the "languages of decolonisation", as well as Arabic, with both roles (Ehlich, 2007). The present age changed the global communication paradigm, leading to re-evaluation of the languages role by both formal and informal entities, including ordinary people of different native tongue involved in a spontaneous communication (Grosse, 2004; Firth, 2009; Kankaanranta, Louhiala-Salminen & Karhunen, 2015).

What would be the future evolution, in the current context of economic and institutional globalisation? Our research proposes a prediction of a possible evolution of languages preference based on geo-political and demographical arguments.

DEFINING THE CONCEPT OF LANGUAGE VOCATION FOR INTERNATIONAL COMMUNICATION

When it speaks about "international language", it refers to a language that is used as means of communication between different nations (Sakaguchi, 1989), while the Ethnologue details about a language that is widely employed between nations in trade, knowledge exchange, and international policy (Lewis, Simons & Fennig, 2015). We prefer perceiving an international language inclusively at individual level, as a lingua franca - a contact language chosen as language of communication between people who share neither a common native language, nor common national culture (Firth, 1996), more close to the Crystal's definition of "genuine global language", whose usage is not restricted by countries or by governing bodies (Crystal, 2003).

Need of a reliable evaluation of the language potential. Inoue sustains that 3 factors control the market value of a language: population size, economic power of the speech community, respectively information quantity and culture elaboration, adding as factor the size of language territory (Inoue, 2007). This perspective on the language takes in consideration the statistics of *native* speakers, with a supplementary correlation with *second language* speakers' statistics. All these statistics are estimations based on various methods, including national census, but also ad hoc surveys

etc. The data can vary depending on the source, and the sources are linked on recent statistics, that make impossible accurate global statistics (Paolillo & Das, 2006). Thus, the most recent estimations officially made by the benchmarks in the language and culture promotion of the most spoken tongues are shifted by 2 years, difficult to accept for a solid comparative analyse. Currently, British Council estimates that worldwide there are over 1.75 billion people who speak English at usual, almost a quarter of the world population (British Council, 2013), compared with 559 million speakers of all levels of Spanish (Instituto Cervantes, 2015), and 274 million French-speaking estimated by the International Organization of the Francophonie (Organisation Internationale de la Francophonie, 2014). Therefore, for a language dynamics research, it is more valuable to correlate the potential of a language with more reliable and comparable elements.

Premise of research. The premise from which we started our research is based on the main function of an official language, which designates the national or administrative/working language of a state, recognized de facto or de jure. By the nature of an official tongue, the citizens of that state are exposed to its use, whether that language is their native language, a second language or different languages than they currently employ. *The exposure to the official language* is revealed during the interaction with education, tax, legal or social assistance systems of the state, health system, the cultural environment supported by the state policies, or even religion structures, etc. In this way, the interaction with the official or de facto working language is implicit, and the national language becomes the language understood and known by the majority of population of a state.

To estimate the degree to which a national language can become a language of communication at international level, we propose the concept of *"vocation of language for international communication"*, which expresses the extent to which a language is sufficiently widespread to a greater number of states, covering wide geographical areas and into contact with larger populations, to generate a widespread utilization, regionally or globally.

For a national language, this *vocation of language for international communication* involves 3 criteria:

1. the geographical spread (measured by the extent of covering the inhabited continents);

2. the number of countries in the world to use it, statutory or de facto as national or administrative/working language (measured by the number of countries which gave an official statute for that language);

3. the number of people exposed to the language, which get in touch in contact with it through direct or occasional employment (measured by the *total* population of the countries with this language recognized as officially tongue).

ASSESSING THE VOCATION OF LANGUAGE FOR INTERNATIONAL COMMUNICATION

Countries and territories. To compare the languages of the world, we analysed a total of 237 countries and territories on the permanently inhabited continents, entities with varying degrees of sovereignty, including some states with disputed recognition, but significant in terms of number of inhabitants, specific language or geographic location relevant to our study. We considered the United Nations (UN) World Population statistics at July 2015 level, as base for the of states and territories list, which includes 230 countries and 2 areas (United Nations Population Division, 2015). Our research distinctly included Taiwan, as a special province of China, concealed in UN statistics as "Other non-specified areas". We divided Guernsey and Jersey, covered in UN statistics as "Channel Islands". The dependent territories of states with colonial history (United Kingdom, France, Netherlands Kingdom, Denmark) were taken detached in this UN country list, not comprised in the mother-countries. This UN statistics considers separately 3 of the 5 overseas collectivities of France (Guadeloupe, Saint Pierre, and Miquelon, respectively Wallis and Futuna), so consequently we put at the same level and we distinctly analysed the other 2 French overseas collectivities - Saint Barthelemy and Saint Martin, included by UN statistics in Guadeloupe's data. Also, our research considered distinctly Pitcairn Islands (a British overseas territory), which is included in the UN statistics in the more large Polynesian area, thus putting this small entity at the same level to the other British overseas territories from this benchmark country list.

This segregation of the United Nations World Population statistics is favourable to our research goal, given their relevance to the full analysis of the geographical spread of the official employment of language. It is relevant that 13 among the dependent territories have a different officially language status than the mother-country, so that distinct investigation of dependent territories and mother-countries optimises a thorough analyse on the language spread and exposure.

Continental dispersion. For our study, we chose a 7 continents geographic distribution: Africa, Asia, North & Central America, South America, Europe, and Oceania (including Australia), and we considered Antarctica as permanently uninhabited continent. We adopted the distribution of countries

by continents from the United Nation statistics, excepting the two Americas, where we adapted The World Factbook distribution.

Population exposure. For measuring the exposure to a language of a population, this research employs the United Nations demographic statistics (United Nations Population Division, 2015). We have taken it into consideration UN population data for 232 of the 237 analysed states, but for 5 dependent territories, separated as explained above, we used the The World Factbook population data for July 2015 (Central Intelligence Agency, 2015): Guernsey, Jersey, Pitcairn Islands, Saint Barthelemy and Saint Martin, respectively we corrected the Guadeloupe's population after separation of Saint Barthelemy and Saint Martin

Official languages. There are very few sources of comprehensive information about language population, but one of them has more specific information (Paolillo & Das, 2006). We used Ethnologue as reference and we considered its second level of the EGIDS scale, called the Level 1 - the national language (the language is employed in education, work, media, and government at the national level), focus on the level of recognition and usage language by given to the government, correlated with the focus includes the widespread employment of the language in the media and the workplace at national levels. The primary component of Level 1 status is that the written language is utilized to conduct the business of national government, this form of need not take being declared the "official" in law (Lewis & Simons, 2010).

To assess the spread of a language use on the world, our research adopts the Ethnologue's assignment of the languages of statutory or de facto, national or national working functions, as a landmark in this field (Lewis, Simons, Fennig, 2015). For 2 of the 237 analysed states (Falkland Islands, respectively Saint Helena, Ascension, and Tristan da Cunha), for which there are not Ethnologue's data, we assumed the information from The World Factbook (Central Intelligence Agency, 2015).

Language function classification. We adopted the Ethnologue's methodology that makes distinction between statutory and de facto functions of a language. When a language function is described as *statutory*, it means that there is a legal document (constitution of the country, language or diversity policy legislation, etc.), that specifies the functions for which the language will be used, as for *de facto* status, in many countries languages are commonly utilized for governance functions without a formal legislative mandate for that usage. In this context, the methodology defines the *statutory national language*, as the language in which the business of the national government is conducted and this is mandated by law, and also the language of national identity for the country's citizens, respectively the *statutory national working language*, as a language in which the business of the national government - parliament, laws, official forms, etc. - is conducted and this is mandated by law, but that is not the language of national identity for the citizens of the country. Often, for very practical reasons, many countries use an international language or the language of a (former) colonial power for day-to-day operations of the government, but national identity is represented by a different language (Lewis, Simons & Fennig, 2015).

A special place for our research is de facto national languages, which reflect the real utilization of a language, failing a formal framework. We included in our study *de facto national languages*, and in addition, we took into account *de facto national working languages*. This *de facto national* function of a language strongly influences the statistics on the language use, at global level, due to the multilinguism.

RANKING THE LANGUAGES BY THE VOCATION OF LANGUAGE FOR INTERNATIONAL COMMUNICATION

Our analysis aggregated the data concerning the states and dependent territories, characterised by: national language, national working language, population and continent, grouping them by language and by continents, distinguishing statutory, and respectively de facto language function. The *Table no.1* organizes the aggregated data of the study. The *Figure no.1* presents the exposure of population on national and working languages, by continents, and the *Figure no.2* presents the dispersion of national and working languages, by continents.

The analyse of the data aggregation emphasises a small group of national or national working languages with spreading on at least 3 countries or territories: English (91 countries), French (48), Spanish (22), Arabic (26), Russian (11), Portuguese (9), Dutch (7), German (5), Chinese (5), as well as Italian (5), Danish (3), Malay (3), Swahili (3), and a smaller group of them spread on at least 2 continents: English (6 continents), French (6), Spanish (4), Portuguese (4), Dutch (3), Arabic (2), Russian (2), Danish (2), Italian (2), but also Greek (2 continents, due to the formal distribution of Cyprus in Asia). Some other languages have an official status in 2 countries, generally that are contiguous: Croatian, Papiamentu, Romanian, Serbian, Sotho, Swahili, Swati, Swedish, Tswana, and Turkish. All of these languages, being statutory or de facto recognized by more than one country, could be considered as "international languages", meaning that is could make possible the communication between 2 nations.

Another 88 languages have a statutory or de facto national status in 83 countries. These languages are recognized as officially tongue in a single country. Therefore, an evaluation of the vocation of language for international communication would be made for the 23 national languages officially used in at least two countries.

In order to assess the vocation of language of international communication, we propose two levels of functionality: *global level* (usage on the most of the continents, by large population from large number of countries) and *regional level* (usage inside of a continent or over 2 continents, by population of countries with vicinity relations or geo-political links). In addition, we propose, for simplicity, 3 levels of intensity for this vocation of language of international communication: low, medium, respectively strong, expressing the extent in which the language cumulates the 3 criteria of exposure.

The 23 international languages could be grouped in 5 clusters, as described below (see *Figure no.3*).

Cluster 1: Languages with low vocation of language of international communication *at global level*, and low vocation of language of international communication *at regional level*. This cluster will include the languages officially used in 2-3 neighbouring countries, as the case of *Croatian, Greek, Malay, Papiamentu, Romanian, Serbian, Sotho, Swahili, Swati, Swedish, Turkish, Tswana*, or employed in the mother-country and dependent territories, as *Danish* (officially utilized in Denmark, Faeroe Islands and Greenland); most of them are spread on only one continent. The potential of these languages to exceed their boundaries are low. Most of the are "languages of decolonisation", as Elrich named languages as Malay, Papiamentu, Sotho, Swahili, Swati, or Tswana – languages statutory replacing the old colonial languages or becoming national identity tool (Ehlich, 2007). Swedish and Danish, with a dispersion that keep the history traces of Viking conquests and further Scandinavian evolution, lost their force to gain new territories and become minor regional languages. Similarly, Turkish lost the opportunities to enlarge its influence at regional level, and some languages with old links with it are promoted as distinct national languages: Azerbaijani, Kazakh, Kyrgyz, Turkmen, and Uzbek.

We admit that all other languages without international character could be included in this cluster; they have the same level of performance in relation to international communication.

Cluster 2: Languages with low vocation of language of international communication *at global level*, but medium vocation of language of international communication *at regional level*.

This cluster will include Dutch and Italian, Portuguese and German, but also Chinese.

Dutch are officially used in 7 countries from 3 continents: Netherlands, 4 constituent countries of the Kingdom of Netherlands – Aruba, Curacao, Sint Maarten and Caribbean Netherlands, and Surinam, an ancient territory of the same kingdom. In addition, Dutch are an official language in Belgium, employed by Flemings. Despite the spread on 3 continents, it cannot speak about a large international exposure at this language, being spoken rather inside the same kingdom, with only 5 % of speakers outside of Europe. Dutch remains a regional language, at the European level as well as Caribbean level. The Afrikaans, a language derived from Dutch in the last three centuries, presently spoken mainly in South Africa and Namibia (*Lewis, Simons, Fennig,* 2015), is considered a distinct tongue, but could count in the potential increasing role of Dutch as international language.

Italian is officially used in 5 countries from 2 continents. 3 of them are geographically inside the Italy borders: Italy, San Marino, and Vatican. Switzerland is a neighbour of Italy, and Italian is one of the 3 its official languages. The extra-European state that utilizes Italian, as statutory working language, is Somalia, as result of the history influence of the 2nd World War (Ehlich, 2007). The spread of Italian as official language is low in Europe, and the atypical presence as working language in Africa, with an uncertain future in the context of Islam's expansion in Somalia region, is not enough to sustain its vocation of global international language.

Portuguese is used as national or working language on 4 continents, but in a small number of states, with a high concentration of population exposure (75.44%) in a single state in South America, Brazil. The distribution of its usage is linked to the colonial expansion of the first global empire - the Portuguese Empire, but in most of cases, the countries using Portuguese are isolated and singular on one continent, thus the only international regional potential of this language exists in some areas of Africa. The economic power of Brazil could support the increasing interest for this language as international communication language at global level.

German has one of the most concentrated uses among the most spread languages, having official language statute in 5 countries from only 1 continent, Europe, all of them being in geographical vicinity. This concentration helps the natural utilization as international communication language at regional level (Central and Western Europe), but limits the expansion of this language's utilization at a larger scale in Europe, much less on other continents. The effects of the two World Wars decreased the popularity of German for many time, face to English, French or Spanish (Caroll,

2007), but like Portuguese, the economic power of Germany - the main state speaking German, supports the increasing interest for this language as international communication language at global level.

Chinese is a special case of this assessment, since 19.56 % of world population has exposure to Chinese (Mandarin dialect) as the official language facto or de jure. Nevertheless, Chinese are officially employed on only one continent, and 97.89 % of this exposed population is concentrated in only 2 states: China and its special regions - Taiwan, Hong Kong and Macao, and only one other country, Malaysia - which utilizes Chinese as working language. The Mandarin dialect of Chinese become de facto regional communication language especially for Chinese people, speakers of many mutually incomprehensible dialects (Clyne, 1989). The large Chinese populations from diaspora, on all continents (Baker & Jones,1998), and their role in the international trade transforms Chinese in a de facto communication language at global level, but generally preferred by native speakers (Coupland, 2011). The prospect of its adoption by a wider population is geographically and culturally limited, because the specificity of Chinese, with ideogram characters and phonology, make difficult the understanding by other culture's speakers (Coulmas, 1989). Chinese remains only a major language by its huge number of speakers, superior to other international languages, as Coupland appreciated (Coupland, 2011), and is not a really world language, because it meets only the demographic criterion, without global or regional wide spreading.

Cluster 3: **Languages with low vocation of language of international communication at global level, but strong vocation of language of international communication at regional level.** This cluster will include Arabic and Russian.

Arabic language has a very strong vocation of language of international communication at regional level. 5.7% of the world population is exposed to the use of that language as national or working language. The large number of countries and population, comparable to the corresponding Spanish language, is concentrated, however, on just two continents, Africa and Asia. In fact, Standard Arabic is an umbrella for 30 local Arabic languages, sometimes very different (Lewis, Simons, Fennig, 2015). The prospect of its adoption by a wider population is geographically and culturally limited to the former African and Middle East colonies or other African countries with important Islamic culture populations (Backer, Jones,1998; Daoud, 2011).

Similar to Chinese, the large spread of Arabic diaspora (Lewis, Simons, Fennig, 2015) and its strong economic and cultural links with the origin countries make that Arabian becomes a de facto international communication language, but favourite for native speaker. The specific graphy, different from Roman alphabet and the cultural link to Islam also limit spontaneous expansion of this preference for the Christian populations or Roman writing users.

Russian has also a high vocation of language of international communication at regional level. It is employed officially or de facto in 11 countries, from 2 continents, with a concentration of 51.8% in the Russian Federation, that demonstrates the regional vocation of language for de facto unofficial utilization is larger, but ceased or limited by political reasons in some countries with large Russian speaking population, as Ukraine, Lithuania, or Moldova. The prospect of its adoption by a wider population is geographically limited, and the Cyrillic letters make this language unfamiliar to Roman writing user.

Cluster 4: **Languages with medium vocation of language of international communication at global level.** This cluster will include Spanish and French.

Spanish and *French* have a large distribution at global level, 6.8%, respectively 6.2% of the world population being exposed to the use of these languages. French is utilized as de jure or de facto national or working language in 48 states and territories on all 6 continents, including 11 French dependent territories or departments. Spanish is officially used on 4 of 6 continents in 22 countries, but with a population concentration of 89.64% in South America and North & Central America, in 19 states. Both French and Spanish have a strong vocation of language of international communication al regional level: the official employment of French is largely spread especially in Africa and Caribbean area and in Western Europe, while Spanish is the main language for South and Central Americas. Nevertheless, these 2 languages have a most favourable status than the ones from Cluster 3: they are consistently spoken on at least 3 continents, and they are adopted by states from at least 4 continents, that exceeds the regional framework and explain our evaluation of vocation of language of international communication, as medium at global level.

Cluster 5: **Languages with strong vocation of language of international communication at global level.** This cluster will include only English.

English has the strongest vocation of language of international communication at global level. 37.2% of the world population are exposed to the use of English, this language being utilized as the national or working language, de jure or de facto, in 91 states and territories from all 6 continents,

representing 38.4 % of United Nations statistically individualized countries. The large spread of English on all continents is based on the colonial history of British Empire and further geopolitical evolution of United States, which expanded their strategical influence on many insular territories from Atlantic and Pacific Oceans. Excepting South America, where is less officially employed, English have consistent national recognition on important countries from all continent. Most of them use English in multilingual situation (Baker & Jones, 1998). The combining of large dispersion and important economic and politic representativeness of English using countries generates a synergy that sustains an increasing interest for it as communication language from institutional and private users, transforming this language in a naturally choice of people and organizations for a communication implying at least a non-native speaker.

CONCLUSIONS

Our research placed all officially recognized national languages in 5 clusters, grouped by 3 levels of intensity (low, medium, strong) and 2 levels of functionality (global, regional) of the vocation of international communication language. A relative hierarchy is created. The first ranked are English, having the strongest vocation, and French and Spanish having medium vocation of international communication language at global level. Other languages have rather a vocation of international communication language at regional level than at global level, more powerful being Russian and Arabic, and less powerful being: Portuguese, Dutch, Chinese, Italian and German. Other 13 languages recognized as national languages in at least two countries, as well as other 88 languages recognized as national languages in only one country, are at the bottom of this hierarchy, with a low vocation of international communication language, both at global and regional level.

The relevance of the proposed concept could be argued by its convergence with other languages hierarchies. The results of our study converge to the level 0 of Ethnologue's EGIDS scale that includes the "international languages". In this level, Ethnologue placed only the "institutional language", namely United Nations' six working languages: Arabic, Chinese, English, French, Russian and Spanish (Lewis, Simons, Fennig, 2015). Withal, our results chime with the largest list of "major international languages" of Baker and Jones, which comprises English, German, Dutch, Portuguese, Spanish, French, Arabic, Russian, and Chinese (Baker & Jones, 1998).

Our study places Chinese at an inferior rank as international language, because its concentration on a single continent and a small number of states, despite the strong demographic argument, concluding that the perspective for it to become an important world lingua franca is limited. This evaluated rank is similar to Coupland's opinion (Coupland, 2011).

The new proposed concept of *vocation of language for international communication* is useful to predict the future evolution in the international communication. The languages with a more powerful vocation at global or regional level will stimulate the institutional interest of states and public or private organizations to assure a good level of tongue acquaintance for their target population, for political and/or economic reasons. Likewise, the individual interest for a foreign language will naturally lead towards the languages perceived as the most widely comprehensible.

On the other hand, the languages with the less powerful vocation of language for international communication (placed in cluster 1) will be increasingly threatened to isolation and homogenization at global scale, becoming the object of national and international multilinguistic and cultural diversity politics. The chance of these tongues could be the particular purpose of the business organization with investments in the countries with languages from the cluster 1, which wish to gain a competitive advantage in the smaller and medium-sized businesses (Backer, 2001). They will encourage the employment of the local language at international level, at least for executive and international trade staff, to balance the communication and culture adaptation.

Further deeper researches could link the vocation of language for international communication with language diversity on the most accessible medium for communication al global level – the internet. Likewise, a correlation between the type of alphabet specific for each language (Roman, Arabic, Cyrillic etc.) and the spread of these languages will offer new perspectives on this tool of language expansion prediction.

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ANNEXES

Table 1. Geographic distribution and population exposure to the official use of the international languages

Abbreviations:
sNL= statutory national language, dfNL= de facto national language,
sNWL= statutory national working language, dfNWL= de facto national working languages,
NL.= national statutory or de facto languages, WL.= national statutory or de facto working languages,
N&WL= national and working language/s

Language, statute / Continent/ Exposure	Africa		Asia		Europe		Australia & Oceania		South America		North & Central America		Total	
	Population [a] (millions)	No. countries [b]	Population [a] (millions)	No. countries [b]	Population [a] (millions)	No. countries [b]	Population [a] (millions)	No. countries [b]	Population [a] (millions)	No. countries [b]	Population [a] (millions)	No. countries [b]	Population [a] (millions)	No. countries [b]
English, sNL	227.5	13	188.9	1	4.7	1	1.5	5	-	-	36.0	2	458.7	22
English, dfNL	240.4	8	-	-	65.0	5	37.5	14	0.8	2	327.9	20	672.0	49
English, sNWL	51.0	2	1,455.4	6	0.4	1	0.0	1	-	-	3.7	1	1,512.0	11
English, dfNWL	58.7	2	32.4	5	-	-	0.1	1	-	-	0.1	1	91.4	9
English, N&WL	**577.7**	**25**	**1,676.7**	**12**	**70.1**	**7**	**39.2**	**21**	**0.8**	**2**	**367.7**	**24**	**2,734.1**	**91**
Chinese, sNL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chinese, dfNL	-	-	1,407.3	4	-	-	-	-	-	-	-	-	1,408.7	4
Chinese, sNWL	-	-	30.3	1	-	-	-	-	-	-	-	-	30.4	1
Chinese, dfNWL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chinese, N&WL	**-**	**-**	**1,437.6**	**5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1,439.1**	**5**
French, sNL	288.8	21	-	-	84.0	4	0.8	4	0.3	1	36.8	6	410.8	36
French, dfNL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
French, sNWL	0.8	1	0.6	1	-	-	-	-	-	-	10.7	1	12.1	3
French, dfNWL	67.4	5	5.9	1	0.2	3	-	-	-	-	-	-	73.6	9
French, N&WL	**357.1**	**27**	**6.4**	**2**	**84.3**	**7**	**0.8**	**4**	**0.3**	**1**	**47.5**	**7**	**496.5**	**48**
Spanish, sNL	0.8	1	-	-	46.1	1	-	-	205.6	8	71.0	9	323.5	19
Spanish, dfNL	-	-	-	-	-	-	-	-	3.4	1	127.0	1	130.5	2
Spanish, sNWL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spanish, dfNWL	-	-	-	-	0.1	1	-	-	-	-	-	-	-	1
Spanish, N&WL	**0.8**	**1**	**-**	**-**	**46.2**	**2**	**-**	**-**	**209.0**	**9**	**198.0**	**10**	**454.0**	**22**
Arabic, sNL	214.2	11	160.6	13	-	-	-	-	-	-	-	-	374.9	24
Arabic, dfNL	5.2	1	-	-	-	-	-	-	-	-	-	-	5.2	1
Arabic, sNWL	40.2	1	-	-	-	-	-	-	-	-	-	-	40.3	1
Arabic, dfNWL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arabic, N&WL	**259.7**	**13**	**160.6**	**13**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**420.4**	**26**
Portuguese, sNL	55.6	5	1.2	1	10.4	1	-	-	207.8	1	-	-	274.9	8
Portuguese, dfNL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portuguese, sNWL	-	-	0.6	1	-	-	-	-	-	-	-	-	0.6	1

Portuguese, dfNWL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portuguese, N&WL	**55.6**	**5**	**1.8**	**2**	**10.4**	**1**	**-**	**-**	**207.8**	**1**	**-**	**-**	**275.5**	**9**
Russian, sNL	-	-	23.6	2	143.5	1	-	-	-	-	-	-	167.0	3
Russian, dfNL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Russian, sNWL	-	-	-	-	9.5	1	-	-	-	-	-	-	9.5	1
Russian, dfNWL	-	-	52.1	4	48.1	3	-	-	-	-	-	-	100.3	7
Russian, N&WL	**-**	**-**	**75.7**	**6**	**201.1**	**5**	**-**	**-**	**-**	**-**	**-**	**-**	**276.9**	**11**
Dutch, sNL	-	-	-	-	11.3	1	-	-	-	-	0.1	2	11.4	3
Dutch, dfNL	-	-	-	-	16.9	1	-	-	0.5	1	-	-	17.5	2
Dutch, sNWL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dutch, dfNWL	-	-	-	-	-	-	-	-	-	-	0.3	2	0.3	2
Dutch, N&WL	**-**	**-**	**-**	**-**	**28.2**	**2**	**-**	**-**	**0.5**	**1**	**0.3**	**4**	**29.1**	**7**
German, sNL	-	-	-	-	97.6	4	-	-	-	-	-	-	97.6	4
German, dfNL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
German, sNWL	-	-	-	-	0.6	1	-	-	-	-	-	-	0.6	1
German, dfNWL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
German, N&WL	**-**	**-**	**-**	**-**	**98.1**	**5**	**-**	**-**	**-**	**-**	**-**	**-**	**98.1**	**5**
Minor international languages [c], NL	113.6	4	191.6	7	135.1	13	-	-	-	-	0.3	2	440.6	27
Minor international languages [c], WL.	49.8	2	1.2	1	5.5	1	-	-	-	-	0.1	1	56.5	5
Minor international languages, N&WL	**163.4**	**7**	**192.8**	**8**	**140.6**	**14**	**-**	**-**	**-**	**-**	**0.3**	**3**	**497,1**	**32**
Other languages [d], NL	297.4	17	2,641.8	28	155.1	21	0.8	6	6.6	1	10.8	2	3,112.6	75
Other languages [d], WL	47.9	3	0.4	1	1	1	0.0	1	31.9	2	-	-	80.3	8
Other languages, N&WL	**345.4**	**20**	**2,642.2**	**29**	**156.3**	**24**	**0.8**	**7**	**38.6**	**3**	**10.8**	**2**	**3,192.8**	**83**

Notes:

a) Estimated population at July 2015; main data source (99.991 % of total): *World Population Prospects, the 2015 Revision* (United Nations Population Division, 2015); complementary source (0.009% of total): *The World Factbook* (Central Intelligence Agency, 2015). The sum of all populations is different from World population, due to multilingual countries, that was counted for each different official language.

b) Language distribution based on: 99.16 % of studied countries - *Ethnologue: Languages of the World, 18th edition, 2015* (Lewis, Simons, Fennig, 2015); complementary source (0.84 % of studied countries): *The World Factbook* (Central Intelligence Agency, 2015)

c) Languages officially employed in 2-5 countries: Croatian, Danish, Greek, Italian, Papiamentu, Romanian, Serbian, Sotho, Swahili, Swati, Swedish, Tswana, Turkish

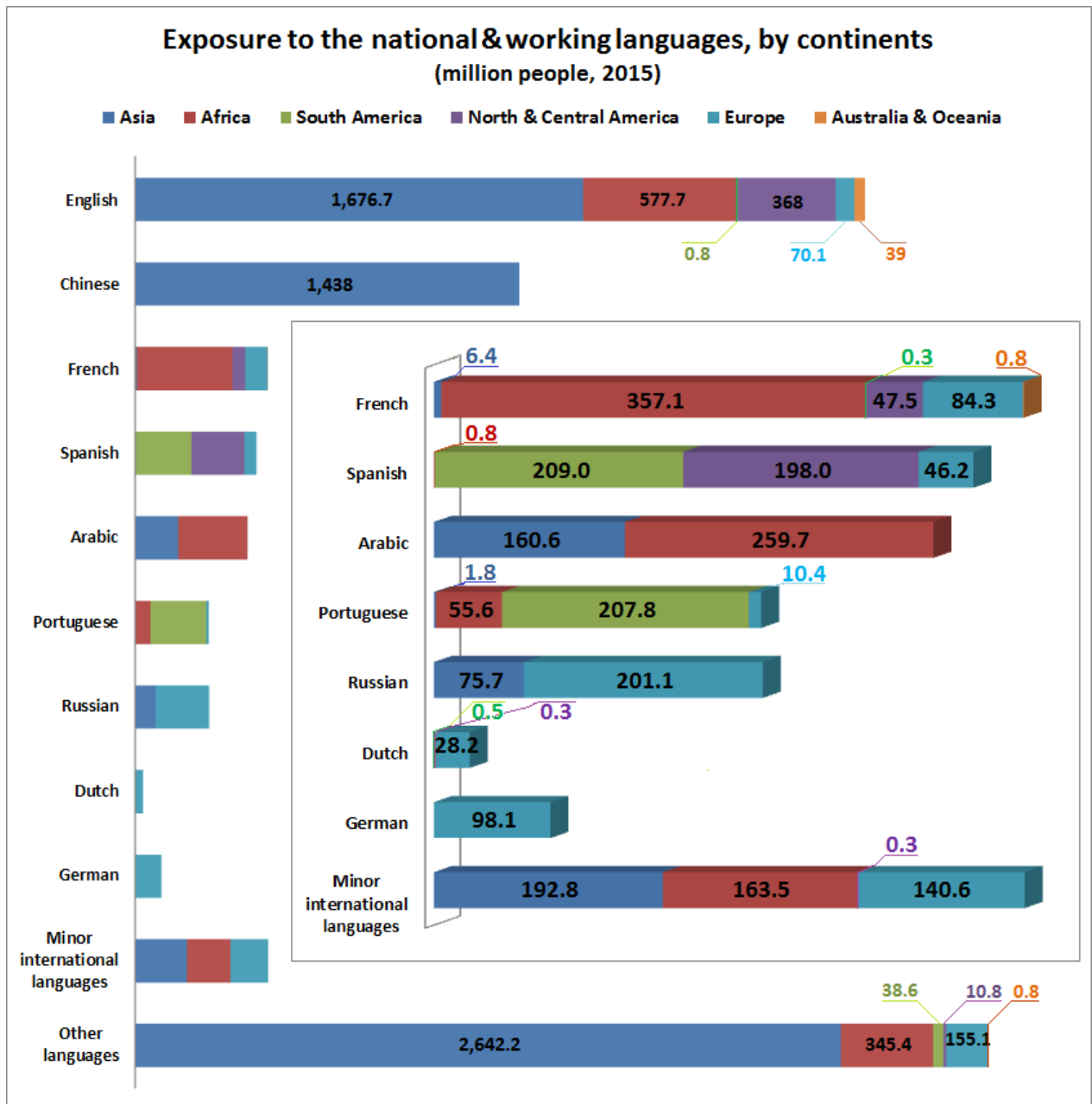d) 88 different languages officially employed in a single country

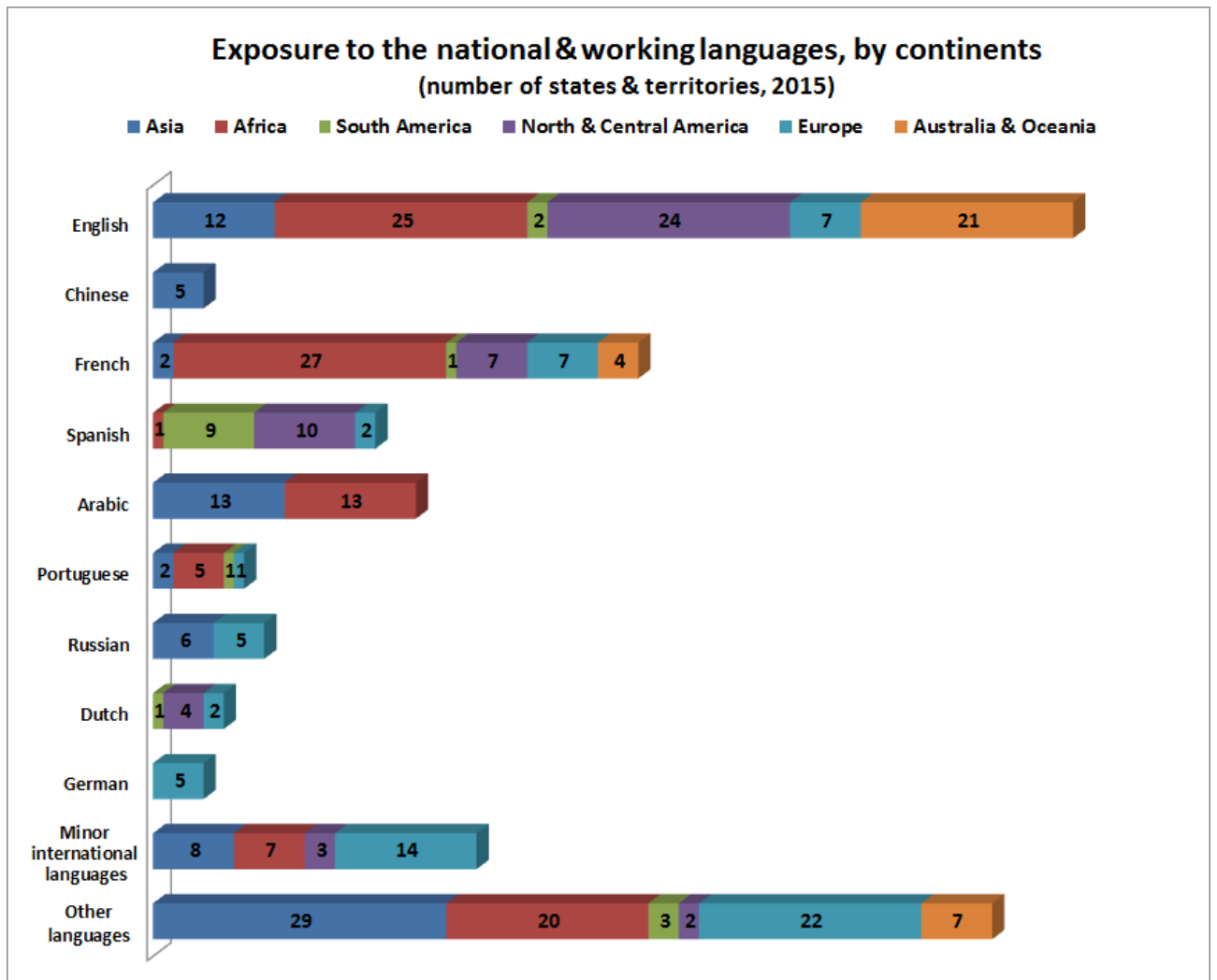**Figure 1. Measuring the exposure of population to national and working languages, by continents**

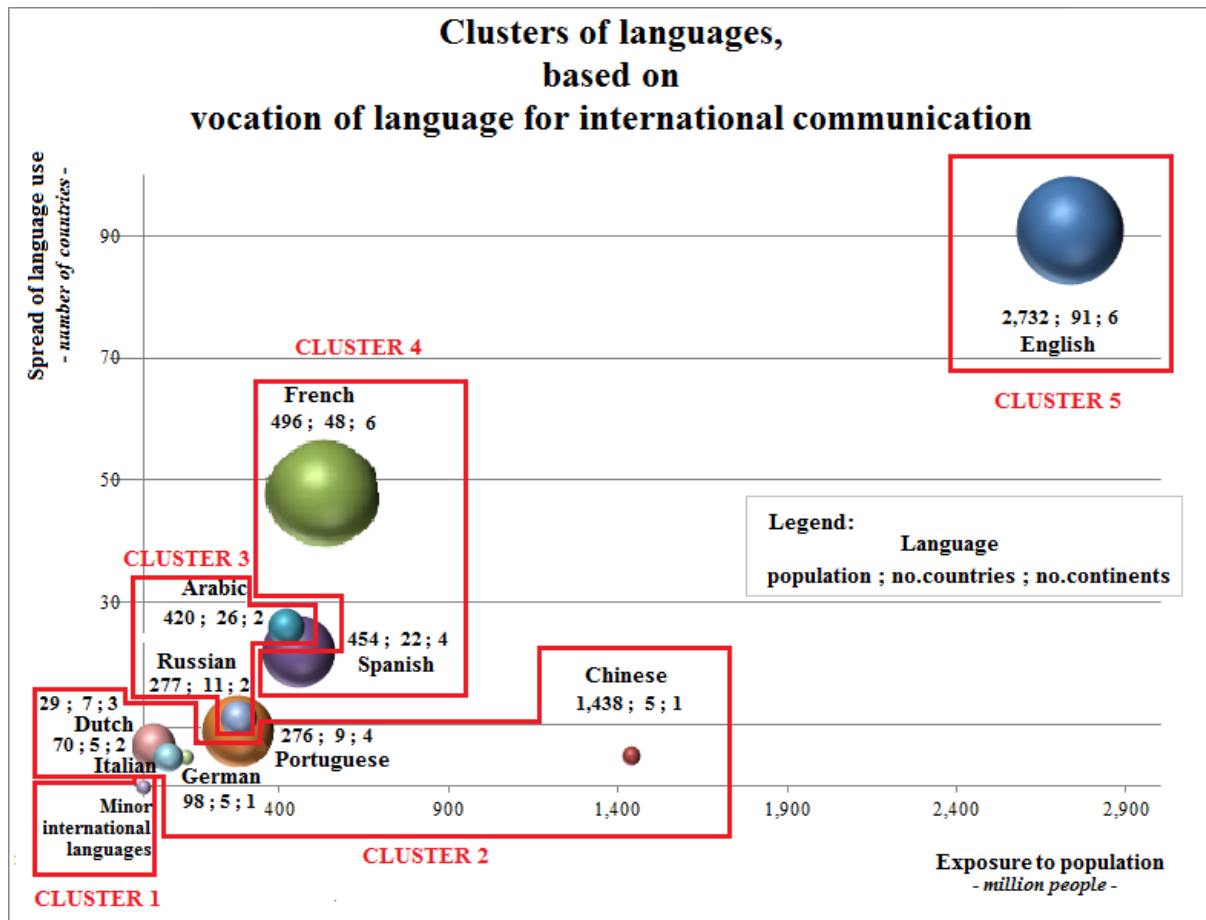**Figure 2. Measuring the dispersion of national and working languages, by continents**

Figure 3. Clusters of languages, based on vocation of language for international communication