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The Dynamics of French publications in Social Sciences and Humanities: A European comparison

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Abstract:

Since 2000, the growth of French SSH publications in the WoS has been slower than that of comparable non-English-speaking European countries. Our study details this slower growth and discusses its causes. Two hypotheses are examined. First, France would be specialized in SSH disciplines that publish few articles. This could contribute to explain why French production is less visible in the international databases that mainly index articles. Second, French SSH scholars would publish relatively more in their national language than other European scholars, and would thus be less represented in journals in English. Our results indicate that in the SSH disciplines in which France is specialized, the proportion of articles is relatively low. Yet, France publishes a larger proportion of articles than the world average in these disciplines. The second hypothesis is confirmed to the extent that France has the lowest share of publications in English within the benchmark group of European countries. This remains true despite the fact that French publications in English are growing more strongly than those in French. The analysis also suggests other explanations that should be further explored.

Introduction

Quantitative measurements and the use of bibliometric indicators have increasingly become the standard in scientific research evaluation. However, many French scholars in social sciences and humanities (SSH) criticize these indicators, calculated from international citation databases such as Web of Science (WoS) or Scopus, claiming that these indicators underestimate their actual research production. This criticism stems from the coverage issues of these databases. First, they mainly list articles and proceedings at the expense of other document types (monographs, books and book chapters). Second, publications written in English are overrepresented in these bases.

Logically, coverage biases should penalize SSH in all non-English-speaking countries. Yet, Germany, Italy and Spain, which are comparable to France in terms of scientific research, have sharply increased their SSH publications in international databases over the last fifteen years. In contrast, French publications have grown slowly, although the country has a large scientific community in these disciplines.

Our paper aims to analyze the reasons for the slow growth of French SSH publications within WoS in comparison to this group of non-English-speaking European countries. To do so, we examine two hypotheses related to biases cited above.

Our first hypothesis is that France is specialized in SSH disciplines that publish few articles. This would explain why the scientific French production in these disciplines is less visible in the international databases that mainly list articles.

Our second hypothesis can be formulated as follows: French SSH scholars publish in French, rather than English, unlike scholars in the group of non-English-speaking European countries who tend to publish more in English. French publications are therefore less visible.

To verify these two hypotheses, we firstly identified SSH disciplines in which France is specialized. We then analyzed the distribution of document types by discipline for France in WoS and compared it to the World. Next we compared the French share of articles in WoS

and in the French open repository HAL. Secondly, we analyzed how the share of publications in English evolved from 2000 to 2015 in France, Germany, Italy and Spain. We added the Netherlands regardless of its volume of publications.

The first section of this paper presents a literature review on the specificities of SSH and their representation in international databases. The second section explains our methodology. The third section frames the analysis by presenting the progress in volumes and specializations of the selected countries. Sections four and five verify respectively our two hypotheses presented above. Finally, the discussion of the results raises new questions as tracks for future research.

1. Literature review: Specificities of SSH and Database Coverage

1.1. Specificities of the social sciences and humanities

The issue of the specificities of social sciences and humanities (SSH) is widely discussed in the literature. Hicks (1999, 2004) defines four types of research outputs in these disciplines. First, books play a central role in knowledge diffusion (unlike in sciences or engineering). However, they come in second place to articles published in peer-reviewed journals in terms of use in bibliometric analysis, because their coverage in international databases, like WoS or Scopus, is limited (Waltman 2016). Articles with a national orientation constitute the third type of output in SSH. They are generally published in national journals with smaller readerships. Their academic impact is relatively small, but their social impact can be high (Gruzd et al. 2013; Mohammadi et al. 2013, 2014, 2015a, 2015b; Mohammadi, 2014; Chen et al. 2015). The same is true of non-academic literature (intended for a wide public, such as documentaries, press articles, scientific popularization conferences and seminars), which is the fourth type of output in SSH defined by Hicks.

Hence, some SSH disciplines show similar behaviors to sciences. For instance, in economics, management, psychology and library & information science, articles play an important role (Hicks, 2004, Huang et al, 2008). According to McDonald (2003), the same is true of philosophy. In contrast, in history and literature, articles are relatively less used. In a sample of 173 publications totaling nearly 12,000 citations in three disciplines (philosophy, history and literature), McDonald (2003) shows that books account for more than 59% of all citations. There is a significant difference between the three disciplines: in philosophy, 44% of citations refer to books and 54% to articles, while in history and literature, these shares are respectively 57%/39% and 78%/16%.

Knievel and Kellsey (2005) provide a comparative analysis of eight disciplines: philosophy, music, religion, literature, linguistics, classics, philosophy and history. Their analysis covers more than 9,000 references to articles published in 2002. They show that within the human sciences there are divergences in citation practices. On average, book citations represent 76%. This rate varies between 51% (philosophy) and 89% (religion). There are disciplines in which articles published in journals play a central role in knowledge diffusion, including philosophy (51%) and linguistics (61%). Larivière et al. (2006) show that within SSH, the share of articles is increasing: it rose from 40 to 48% between 1981 and 2000, but more specifically from 60 to 70% in psychology and from 45 to 57% in economics. For other disciplines the rate is relatively stable. History, literature and the "other humanities" cite articles much less, with rates of 34%, 26% and 21% respectively.

Heinzkill (2007) analyzes 20,000 references from 555 articles published in literary journals. His results indicate that book citations represent more than 78%, of which 45% are more than 20 years old. In this case, it must be borne in mind that some of these citations refer to the original books studied, which is a peculiarity of literary studies.

In sum, SSH research outputs can be divided into four main groups: books, scientific articles conference proceedings, communications and seminars; and finally, science popularization products. Books are particularly important in some disciplines.

1.2. Coverage of databases: what place for SSH?

Database coverage level is the main condition of validity in bibliometric analyses. Well-known international databases like Web of Science (WoS) and Scopus mainly cover articles published in peer-reviewed journals and less the other scientific outputs like books (Nederhof, 2006 ; Mongeon et al. 2016). This can be problematic, especially for some social sciences and humanities disciplines in which articles are less widely used in knowledge diffusion.

According to Leydesdorff (2003), 55% of bibliographic references in social sciences are not indexed in the Social Sciences Citations Index (SSCI) of WoS. In the sciences, the percentage of coverage of bibliographic references in the Science Citation Index (SCI) is significantly higher, reaching almost 80%. It is worst for books. Butler's (1998) data on Australian social sciences indicate a strong and negative correlation (-0.83) between the proportion of publications indexed in the SSCI and the share of books in a discipline.

Mongeon and Paul-Hus (2016) compare WoS and Scopus coverage using the bibliographic database Ulrich as a reference on disciplinary, geographical and linguistic aspects. Out of a total of 63,013 academic journals indexed by Ulrich, WoS covers 13,605 journals, while Scopus lists 20,346. Both WoS and Scopus contain geographical and linguistic biases with an overrepresentation of English-language journals and countries. They also contain disciplinary biases, as both databases mostly include articles, which can be problematic, particularly in the humanities and social sciences. 80% of French journals in the Ulrich database in social sciences are not indexed by WoS. This rate is about 58% in arts and humanities, 43% in natural sciences and engineering, and 60% in biomedical research. The same applies to French-language journals: Scopus has a wider coverage of French-language publications than WoS.

Harzing et al. (2017a) and Harzing et al. (2017b) compared the coverage of four bibliometric databases (WoS, Scopus, Google Scholar and Microsoft Academic). Their sample consists of publications from 145 senior researchers representing the five main fields of science (Life Sciences, Sciences, Engineering, Social Sciences, and Humanities). They conclude that Microsoft Academic is an "excellent alternative" for bibliometric analyses. However, they point out that book coverage needs to be improved in Microsoft Academic, especially in SSH, as well as the quality of metadata.

Hug and Brändle (2017) provide a much broader comparative study by analyzing the coverage of three databases, Microsoft Academic, WoS and Scopus. They analyze the coverage of Zurich University researchers' publications in the open archive, "Zurich Open Archive and Repository" (ZORA), created in 2006. They analyze a subset of the ZORA database consisting of 62,791 publications published between 2008 and 2015. Their results show that the three databases have similar coverage rates. Yet, Microsoft Academic has better coverage of social sciences and humanities than the other two databases.

In summary, SSH are the least represented with relatively low coverage rates compared to those of the sciences. This is due in large part to the specificities of the social sciences and humanities, which have a range of scientific products that is not limited to articles published in peer-reviewed journals, and more national and regional audience.

2. Methodology

In this study, we use two data sources: WoS and HAL. The former is the well-known citation database commercialized by Clarivate Analytics. The data has been extracted from Observatoire des sciences et Techniques' (OST), in-house database. The database includes five indexes of the Web of Science (WoS) available from Clarivate Analytics (SCIE, SSCI, AHCI, CPCI-SSH and CPCI-S). As we started our study at 2017, the data corresponds to the full WoS content indexed until 2015. The second data source is HAL, which is the open

French repository launched in 2001 by CNRS (Centre national de la recherche scientifique). Scholars file their productions on a voluntary basis. We extract and analyze data about SSH deposits in HAL to compare them with data from WoS.

To understand why France’s SSH publications in WoS have grown slowly, unlike those of comparable non-English speaking European countries, and given what the scientific literature tells us about the coverage issues of citation databases, we make two hypotheses.

Firstly, we hypothesize that France is specialized in SSH disciplines that publish few articles and so, since WoS lists mainly journal articles, French production is under-represented in this database. To verify this hypothesis, we first identify in which SSH disciplines France is specialized. Secondly, we analyse the distribution of document types for France and for the World. If France is specialized in SSH disciplines that publish mainly articles at the world level in WoS, France can be said to be underperforming. Conversely, if these disciplines publish few articles at the world level, France is disadvantaged by the overrepresentation of articles in WoS.

To identify France’s disciplines of specialization, we use the OST disciplinary nomenclature that classifies WoS categories into 11 major disciplines. In this nomenclature, there are the major discipline “Humanities” and the major discipline “Social Sciences. We group the 81 SSH categories in WoS into 15 clusters as described in table 1.

Table 1: SSH clusters from WoS categories

Social Sciences	Humanities
Health	Arts
Information science and communication	History, archaeology
Sociology, demography, anthropology	Language, linguistics
Law, political science	Literature
Economics	Philosophy, ethics
Education	Psychology
Business, finance, management	-
Geography, urban studies, architecture	-
Multidisciplinary	

We then calculate France’s specialization index for these clusters and compare it to the world average to find out in which clusters France is specialized.

Once we identify France’s specialization clusters, we calculate the share of articles in World and French SSH publications in WoS and compare them. Lastly, we compare France’s share of articles in WoS and in HAL.

Our second hypothesis takes into account the linguistic bias in WoS. It can be formulated as follows: French SSH scholars publish in French, rather than English, unlike scholars in the group of non-English-speaking European countries who tend to publish more in English. French publications are therefore less visible. To verify our second hypothesis, we first explore the evolution of publication volumes in English and in the national languages of the 5 countries in our group, namely France, Spain, Italy, Germany and the Netherlands. In a second step, we analyze the evolution of the share of English in SSH publications for each of these countries.

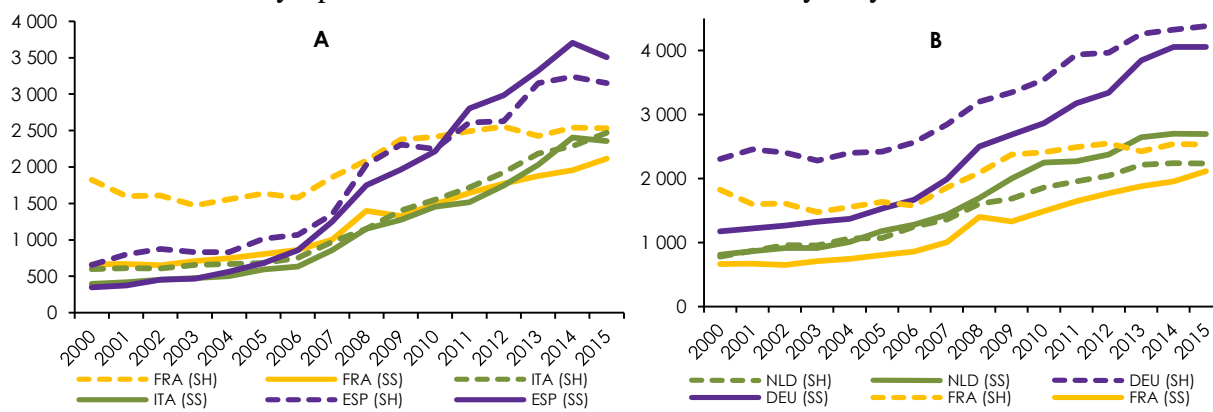
3. SSH Overview of the group of non-English-speaking European countries

The aim of this section is to show the difference between the evolutions of SSH publications in WoS as well as the disciplinary specialization of our benchmark group.

b. Number of SSH publications in WoS

At the world level, the number of publications referenced in WoS has almost doubled in Humanities (320,536 publications in 2015 against 180,994 in 2000). Publications in social sciences (SS) increased from 124,903 to 378,640 over the same period.

Figure 1A shows the impressive growth of Spanish SSH publications. In 2015, Spain published more than 3,500 papers in SS and more than 3,000 in Humanities. Italy multiplied its publications by 7 over the period 2000-2015. In contrast, France recorded slow growth and has been overtaken by Spain in both SS and Humanities and by Italy in SS since 2012.



Source : OST report, « La position scientifique de la France dans le monde 2000-2015 »

Figure 1: Number of SSH publications in WoS, 2000-15

Figure 1B shows that the gap between Germany and France in SS widened between 2000 and 2015. This is also the case for Humanities. Germany, with a relatively large volume of publications, grew more rapidly than France over the period. The same remark is true for the Netherlands, which has overtaken France since 2000 in social sciences. In contrast, the Netherlands had a lower volume of publications in Humanities than France.

c. Specialization index

We have seen in the section above that the number of SSH publications from France increased less than that of the other benchmark countries from 2000 to 2015. We will see that the same trend is true for the specialization index of the countries of interest.

The specialization index of a country in a discipline is the ratio between the share of the discipline in the country's publications and the share of the same discipline in world publications. The higher above 1 the specialization index is, the more the country is specialized in the discipline in question.

Table 2 shows that, in Humanities, very strong growth of the specialization index is observed for Spain (from 0.72 to 1.46). The Netherlands also strengthened its specialization index, as did Germany. France's specialization index remained stable over the period (0.95 in 2000 against 0.97 in 2015). Italy, despite having a very low specialization index in 2000, caught up with France in 2015.

In Social Sciences, Spain's specialization index moved from 0.40 to 1.17. France increased its specialization index in SS by 66% but remains below the world average. This is also the case for Germany. Italy recorded stronger growth, just behind Spain. The Netherlands, already specialized in 2000, reinforced its specialization in 2015.

Table 2: the specialization index in SS and Humanities in 2000 and 2015

Country	Specialization index in Humanities			Specialization index in SS		
	2000	2015	Growth	2000	2015	Growth
NLD	1,09	1,80	+66%	1,18	1,55	+32%
ESP	0,72	1,46	+104%	0,40	1,17	+194%
DEU	0,87	1,16	+32%	0,46	0,77	+66%
FRA	0,95	0,97	+2%	0,36	0,58	+61%
ITA	0,47	0,96	+105%	0,32	0,65	+103%

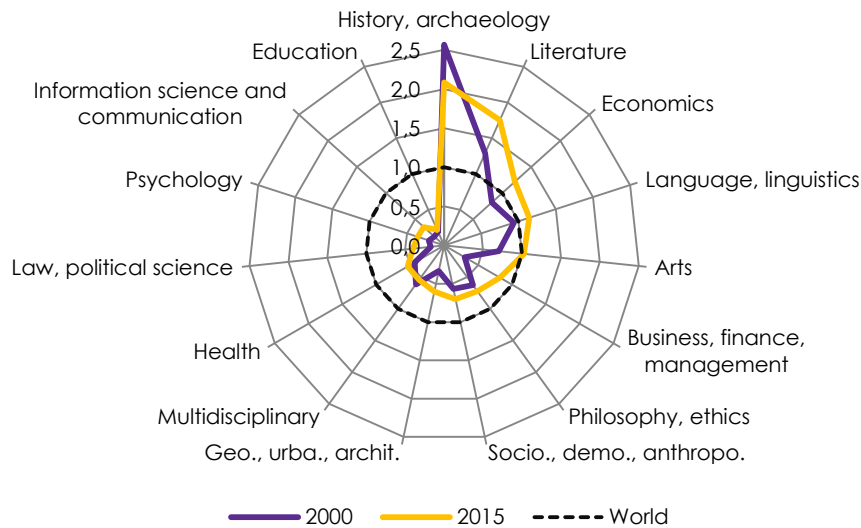
Source: OST base, Web of Science, OST calculations

The biases in coverage of international databases such as WoS seem to be more critical for France than the other countries. France shows limited growth of specialization index. Therefore, in the following two sections, we focus only on the French case and verify our two hypotheses: about document types that SSH publish and about publication languages.

4. Specialization profile and France's SSH publications

a. Document types in WoS

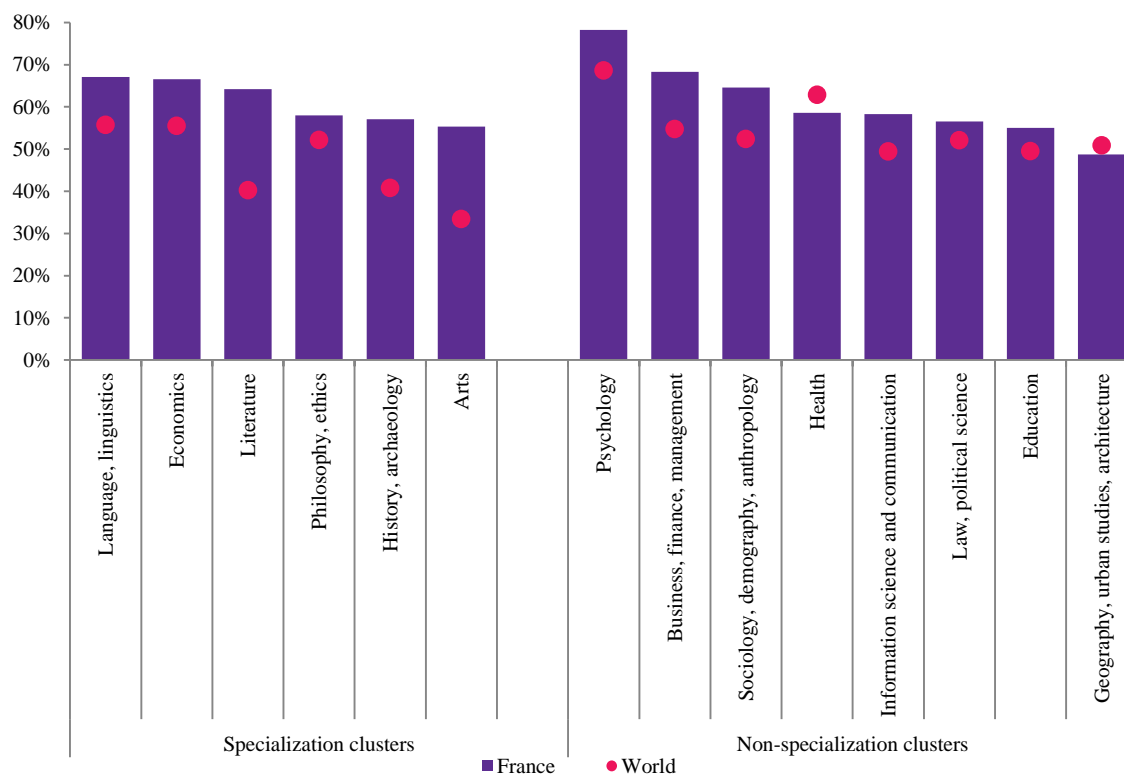
To explain its slow growth in WoS, we hypothesize that France is specialized in SSH disciplines that publish few articles and, since WoS lists mainly journal articles, French production is under-represented in this database. To verify this hypothesis, we first need to identify in which SSH disciplines France is specialized and then characterize French publications in terms of document types. To do so, we calculate France's specialization index for the clusters in SSH (see table 1) and compared it to the world average to find out in which clusters France is specialized. Figure 2 provides data about France's specialization index in 2000 and 2015 and shows that France is specialized more in Humanities than in Social sciences disciplines. Within the former discipline, France was specialized in history-archaeology (2.08), in literature (1.75), in language-linguistics (1.14) and in arts (1.02) in 2015. In the social sciences, France became specialized in economics (index of 1.2 in 2015).



Source: OST base, Web of Science, OST calculations

Figure 2: Specialization index of France in SSH clusters. 2000-15

Figure 3 shows the share of articles in the SSH specialization and non-specialization of France in 2015.



Source: OST base, Web of Science, OST calculations

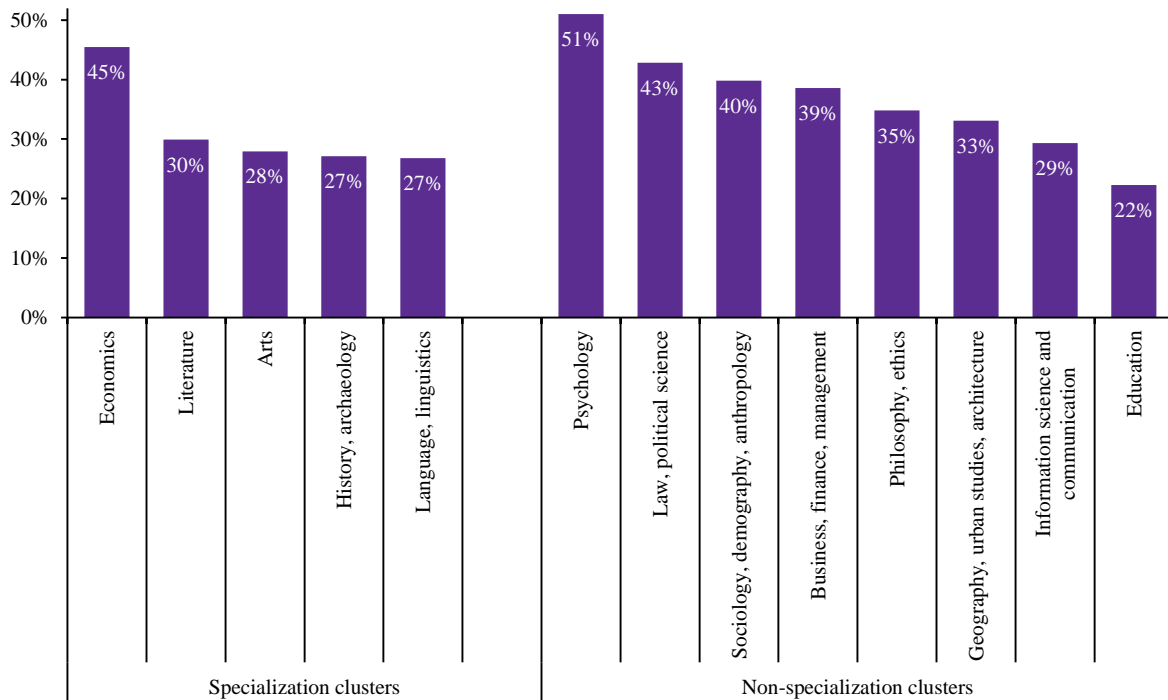
Figure 3: Share of articles in specialization and non-specialization SSH clusters of France in 2015 in WoS

At the global level, the share of articles in language-linguistics cluster and in economics is 56% in WoS. Conversely, the world share of articles is small in arts (33%), in letters (40%) and in history-archeology (41%). The share of articles among French publications in WoS is much higher in all specialization clusters. 67% of French publications in languages-linguistics and economics are articles, 64% in letters, followed by history-archeology and arts respectively with 57% and 55%. A similar trend is observed in France's non-specialization clusters of France, except in the health and geography, urban studies and architecture clusters.

b. Comparison between WoS and HAL

As a second step, we compared the distribution of document types in French specialization and non-specialization clusters in WoS and in HAL, the French open repository to check whether France's clusters of specialization and non-specialization behave in the same way in WoS and HAL.

Figure 4 shows the share of articles in HAL for France's specialization and non-specialization clusters in 2015. In France's specialization clusters, the share of articles does not exceed 30% (except in economics). Psychology is the discipline with the highest share of articles in HAL (51%).



Source : HAL, OST calculations

Figure 4: share of articles in France's specialization and non-specialization SSH clusters in 2015 in HAL

The analysis of WoS and HAL data makes it possible to partially verify our first hypothesis: The clusters where France is specialized are not dominated by articles. Paradoxically, France publishes more articles than the world average in all these clusters. These results could be explained in two ways. Firstly, other French publications (books, book chapters, etc.) are mostly published in French without any abstract in English or without a translation in English. Therefore they not listed in WoS. Secondly, France's scientific production in SSH is simply small in articles intensive disciplines as Psychology compared to that of other countries, and France is not visible in WoS.

5. Language of publications

In this section, we first explore the evolution of publication volumes in English and in the national languages of France, Spain, Italy, Germany and Netherlands. In a second step, we analyze the evolution of the share of English in the SSH publications of each of these countries.

The aim is to verify whether the under-representation of French SSH in WoS can be explained by the fact that the French scholars publish more in their national language, whereas international bibliometric databases tend to cover publications in English.

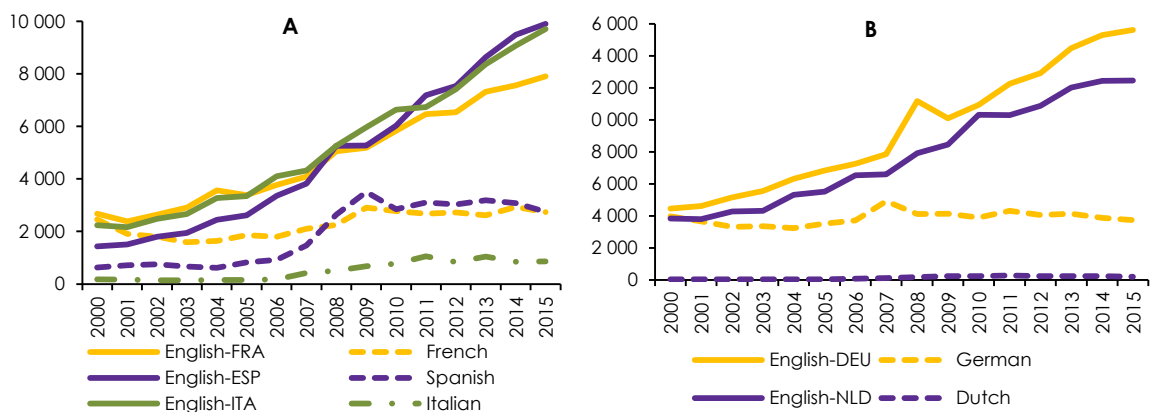


Figure 5: Publication numbers in SHS by language

Figure 5A shows the evolution of publications in English and in national languages. In 2000, the number of publications by France exceeded that of the other two countries. Italy and Spain have since recorded stronger growth than France, and exceeded it from 2005 (for Italy) and 2008 (for Spain). Spain's growth is so strong that it also overtook Italy in 2010. In contrast, Italy publishes less in its national language than France and Spain. Like figure 5A, figure 5B shows a big increase in English-language publications for both Germany and the Netherlands. In contrast, national language publications continue to decline for Germany, and are marginal for the Netherlands.

As for national languages, figure 6 shows an interesting trend. Spain strongly increased its volume of publications in its national language, Spain's publications count for almost 50% of world publications in Spanish, especially between 2006 and 2009. This trend decelerated from 2010, but the volume of Spain's publications in the national language and slightly overtook the France's publications in French that increased slowly during this period. It is worth noting that France's publications count for 65% of world publications in French the same slow trend can be observed for Germany while national language publications are marginal for the Netherlands and Italy.

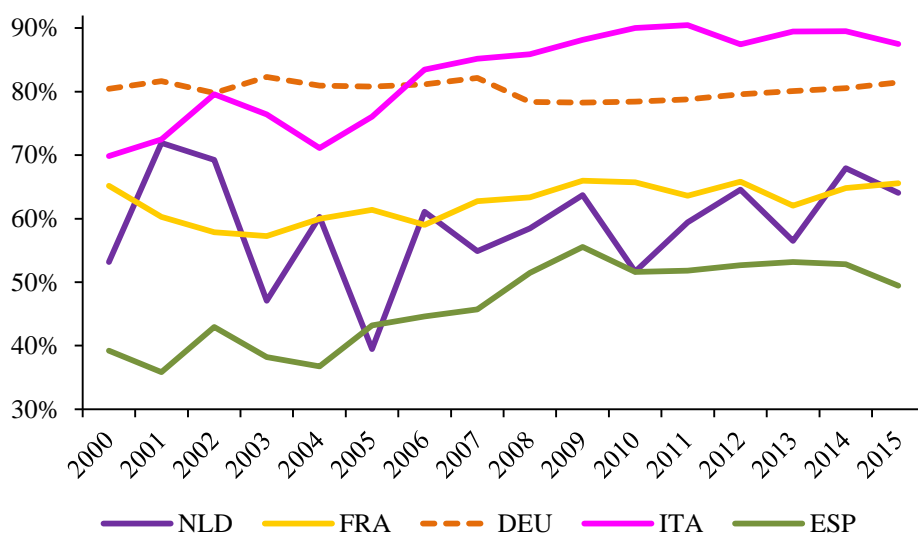


Figure 6: countries' contribution in publication in SHS by national language

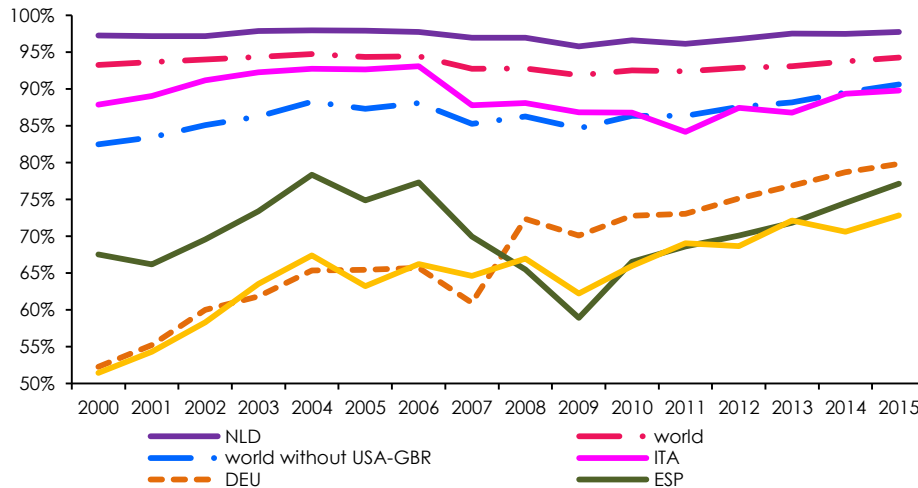


Figure 7: Share of English in the national SSH publications of the group of countries

Figure 7 shows the evolution of the share of English language SSH publications of our group. For the Netherlands and Italy, the share is very high (90-100% over the period). An exceptional trend is also observed in the case of Germany, which in 2000 had just over 50% of its publications in English; the share reached 80% in 2015. The case of Spain is particular; its share of English-language SSH publications increased from 65 to 75% between 2000 and 2006. Then the share dropped until 2009, when it dipped below 60%. This period corresponds to the strong growth in the volume of Spanish-language publications (see figure 5A). After 2009, the share of English in Spanish publications rose again and now exceeds that of France. France has also increased its share of publications in English. However, given its trend, it is the country with the lowest share (73%) within our benchmark group.

With regard to the two previous figures, our hypothesis on the language of publication is verified. France is the country with the lowest share of publications in English. And conversely, it has the highest share of publications in the national language. However, the strong growth of Spain's national language publications raises questions. In particular, why are Spanish publications more visible in WoS than publications in French? Is this an artifact of the database that has increasingly integrated Spanish journals?

In fact, the number of journals from Spain in WoS rose from 31 to 105 between 2000 and 2015. We make the hypothesis that the rise of journals number is correlated with the rise of Spain's publications. We also assume that the Spain visibility in WoS profited from the increase of the number of journals from Latin and South America integrated in the database (from 23 to 105 during the same period). In contrast, the number of journals from France stagnated in WoS around 122 journals with only +5% of growth between 2000 and 2015. Again, we make the hypothesis that this stagnation has a negative impact on France visibility in WoS. In fact, it would be interesting to analyze this question in depth because Spanish or French scholars don't necessarily publish in national journals and could decide to publish in other journals regarding their international visibility or thematic specialisation.

6. Conclusions and discussion

The purpose of this work is to analyze the dynamics of French social sciences and humanities publications in the WoS database by comparing them with those of the comparable non-English-speaking European countries. We started from the hypothesis that France may be doubly penalized by the overrepresentation of articles and English in international bases.

The evolution of SSH publications in the WoS database is highly contrasting in the benchmark group. France is the country to have made the least progress over the period 2000-

2015. Two hypotheses are likely to explain this low progression by France. The first is that France is specialized in some SSH where the share of articles is relatively low. As international databases cover mostly articles, these disciplines are not well represented.

The results indicate that in specialization clusters of France, the proportion of articles is relatively low except in linguistics and economics. This verifies partially our first hypothesis as France publishes more articles than the world average in these clusters. This result raises several questions: do only French articles get through the barrier at the entrance to WoS? Is it easier for French scholars to publish an article in English than a book, given that the time required for preparing and writing a SSH book is longer? Is French production small in articles intensive SSH disciplines?

Regarding the second hypothesis, French scholars in SSH publish less in English than those in other non-English-speaking countries. French publications in English are growing more strongly than French language publications. Nevertheless, other countries have recorded a much larger increase in publications in English. Spain is a particular case as it has increased also its publications in its national language in WoS. France is the last country in terms of share of publications in English; it has difficulty asserting its presence in WOS.

Thus, language may partially explain the low visibility of French SSH in WOS, but questions remain unanswered, especially regarding Spain. Why did Spain have such a strong dynamic of publications written in Spanish in WoS? Is it an artifact of the database that favors the Spanish language (widely used in Latin America) or has it adopted a catch-up strategy for Spain? Or is it more a genuine progression by Spain as a corollary of an increase of R&D expenditures or an efficient research strategy making scholars more productive? The OST report (2018) showed that Spain is the first country to have benefited from the integration (or creation) into WoS of new journals in the social sciences for instance. It would be interesting to analyze this question in depth in order to find out what has afforded Spain such a progression.

In summary, it is partially possible to answer our question about the low presence of French SSH in WOS. It does not seem to be due solely to poor SSH coverage by the database as there are significant differences between non-English-speaking countries. The lack of adaptation to international standards of publication, notably publishing articles in English or at least including an abstract in English, may constitute a part of the explanation. It would also be worth conducting, in the future, an in-depth analysis of national characteristics of SSH publications and of public policies related to scientific production and publication practices in non-English-speaking countries as Spain, Italy and also Belgium and their impact on the visibility.

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