translatE
Transcending language barriers to environmental sciences

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
CREATE CHANGE

October 2020 update on the progress of translatE project

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This update will show you the progress in two of our major project components. We hope you enjoy our October 2020 update!

1. Searches for non-English-language literature on the effectiveness of conservation interventions

This component of translatE aims to identify non-English-langauge papers that tested the effectiveness of conservation interventions, using the same selection criteria used by the Conservation Evidence project (https://www.conservationevidence.com/), and compare scientific knowledge published in different languages.

1.1. Progress so far

We are glad to announce that we have finally completed the relevant literature screening stage for all 16 languages **(Japanese, Spanish, Portuguese, Korean, Traditional Chinese, Simplified Chinese, Turkish, Persian, Polish, Hungarian, Italian, Arabic, Ukrainian, Russian, German and French)**. It has been a long, long way since we started this in 2017. This could only happen thanks to all the help from collaborators who through the literature review found relevant studies to the project. Huge THANKS for your help! We are currently waiting on the relevance checking by the Conservation Evidence (CE) team of the last two languages (Ukrainian and Arabic) to then proceed to the final analysis of our data. Further, to our current language databases, we have added a number of studies that have been found as relevant through *ad hoc* searches by CE members.

1.2. Preliminary results

For the **16 languages** covered by the literature review, we identified a total of **367 journals** related to ecology and conservation, screened **417,668 papers** published in **327 journals** spanning **30 countries**. For the 14 languages where we have the final set of relevant papers (as mentioned earlier, two languages are still going through relevance checking) we identified a total of **1,171 relevant papers**, but the proportion of relevant papers differed markedly among languages.

Figure 1 below shows the number of journals and articles screened for the 16 languages, as well as the number and percentage of articles identified as relevant for the 14 languages. As you can see, simplified Chinese was in a different league in terms of the number of papers screened (Fig 1b), but we were impressed by an especially high proportion of relevant papers in Hugarian (Fig 1d). We will soon share more details with the metadata compiled by our collaborators for each journal screened.

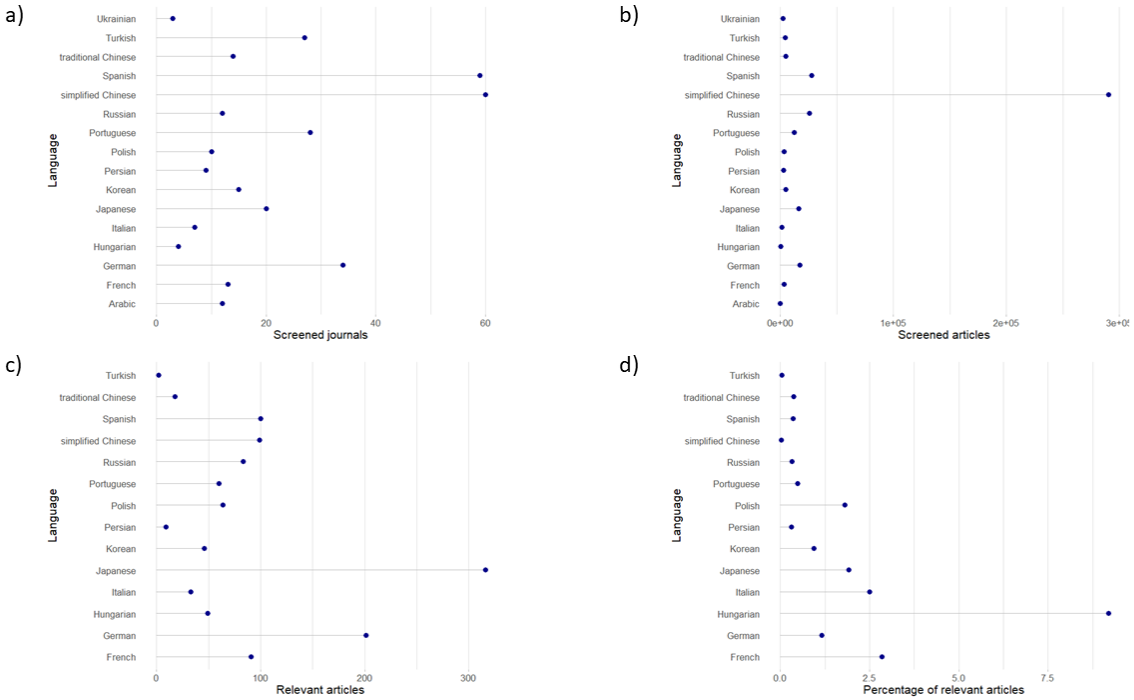

Figure 1. Screening results by language: the number of a) journals and b) articles screened for all 16 languages; c) the number and d) percentage of relevant articles for 14 languages where we have the final set of relevant articles.

We also tested a widespread belief that the number of important non-English-language studies has been decreasing as scientific publications have been shifting from non-English languages to English. Out of the ten languages tested (those with at least one journal with nine or more relevant studies), the number of relevant studies has significantly increased over the years screened in four languages (Japanese, German, simplified Chinese and Portuguese, Figure 2). The other six languages did not show a significant change, with two languages (French and traditional Chinese) showing a marginally-significant increase (Figure 2). Overall this result indicates that the number of important non-English-language studies on biodiversity conservation has actually been increasing, contrary to the widespread belief, over time in many languages.

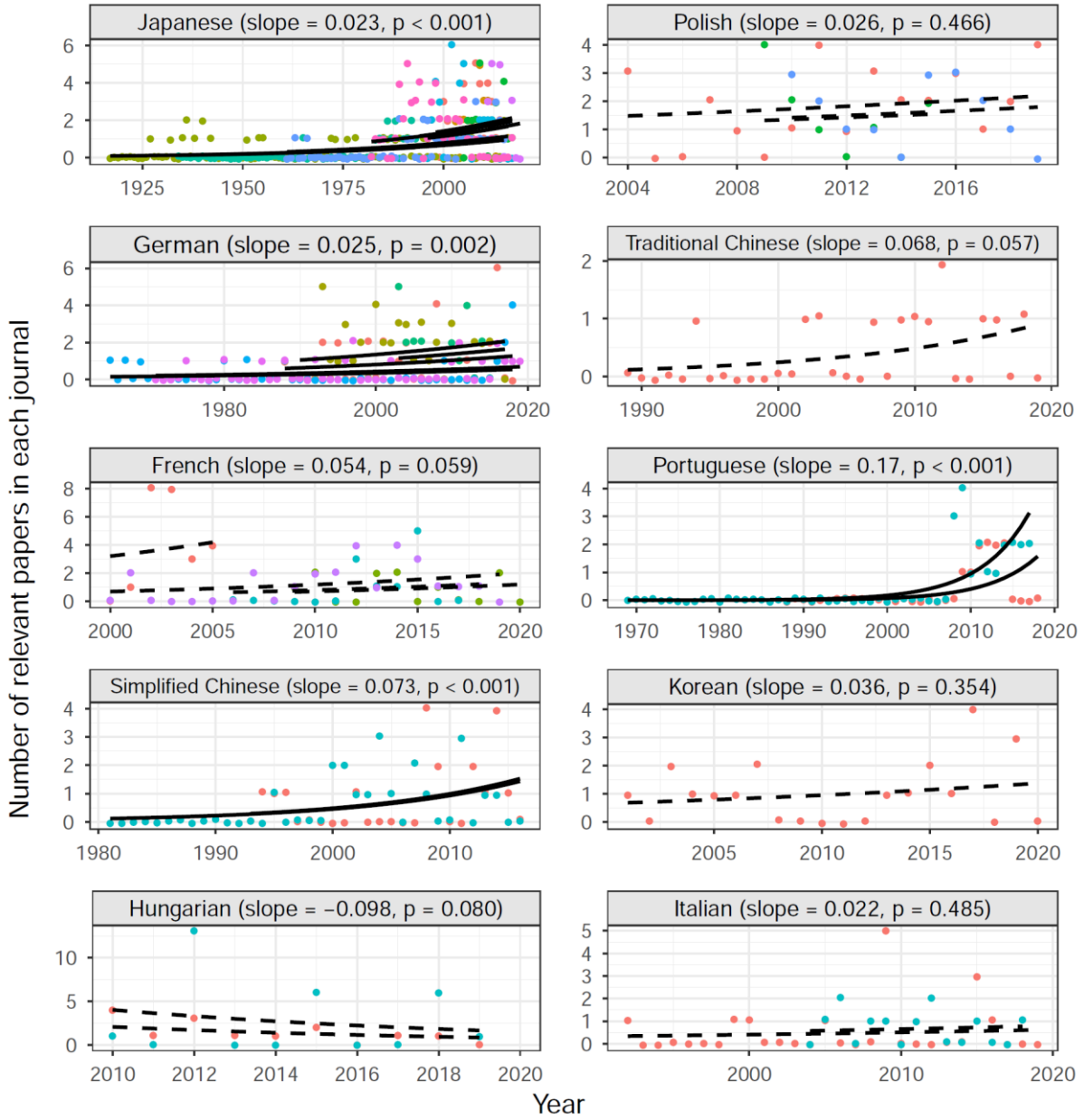

Figure 2. Yearly changes in the number of non-English-language relevant studies in each journal. Only journals with ten or more relevant studies are shown (colours indicate journals). Black lines represent regression lines (significant slopes shown with solid lines and non-significant slopes with dashed lines), with journals as either a random (in a Poisson GLMM) or fixed (in a Poisson GLM) factor for languages with more than one journal.

Once again, we have updated the map of study locations by language with seven new languages (French, German, Hungarian, Italian, Polish, Portuguese, and simplified Chinese; 14 languages in total) (Figure 3). The location of all relevant studies in the 14 languages is shown with coloured dots in comparison with the number of English-language studies, currently stored in the CE database, within each 2-degree grid cell (blue gradation: this is based on Christie et al. 2020. The challenge of biased evidence in conservation. *Conservation Biology*). There are 196 grid cells with only non-English-language studies (and without English-language studies) highlighted in black (compared to 2,731 cells covered by English-language studies), showing the geographical gaps filled by incorporating non-English-language studies (i.e., 7% increase in coverage). We can see that studies

conducted in Russian, Spanish, Portuguese, French, Persian, Japanese, Korean and simplified and traditional Chinese play an especially important role in complementing English-language studies.

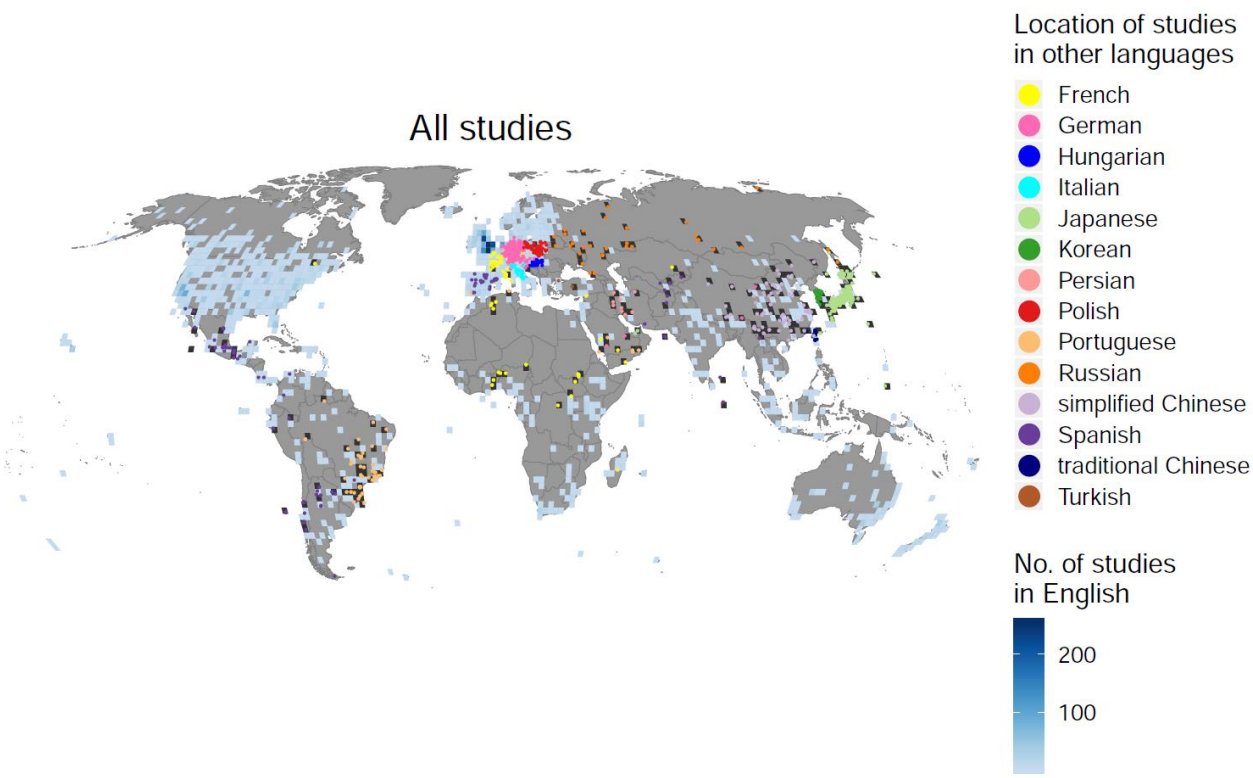

Figure 3. Map of study locations by language. Grid cells with only non-English-language studies are shown in black.

Again, when focusing only on bird studies, the number and spread of studies have dramatically declined in most of the aforementioned languages (Figure 4). However, there are still 76 grid cells with only non-English-language studies, highlighted in black (compared to 1,097 cells covered by English-language studies), again indicating that incorporating non-English-language studies has increased the geographical coverage of bird evidence studies by 7%.

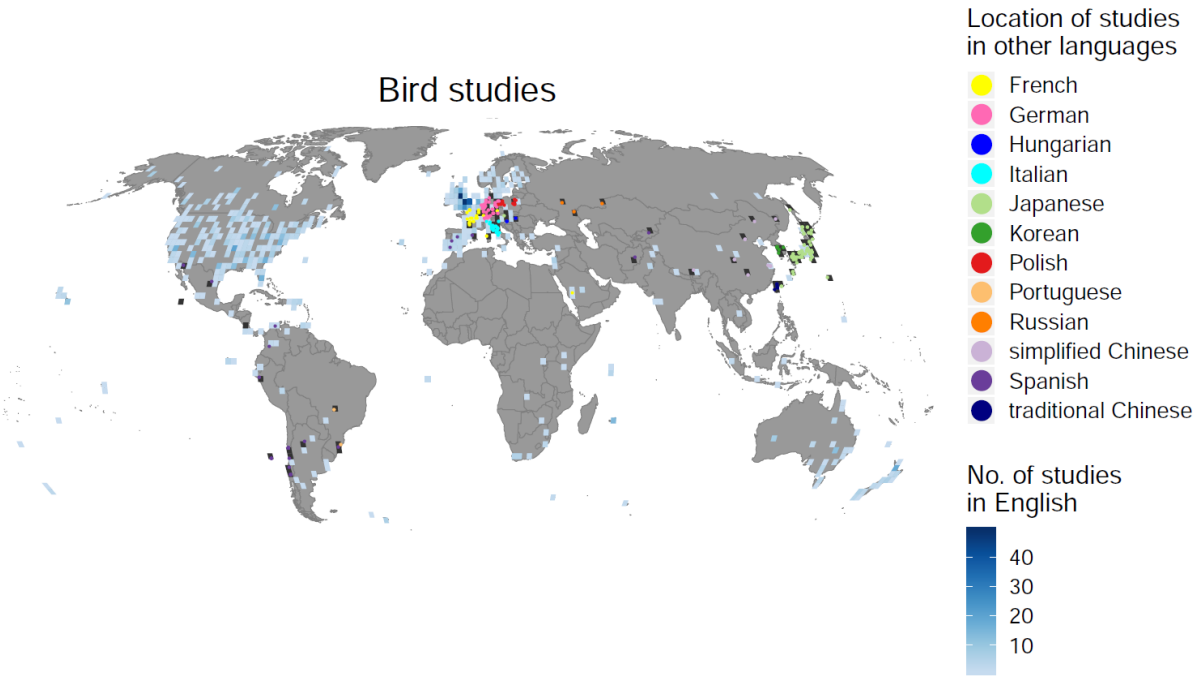

Figure 4. Map of bird study locations by language. Grid cells with only non-English-language studies are shown in black.

1.3. What's next?

After completing the relevance checking for the last two languages, and clearing up species names reported in the identified relevant papers, we will (i) update the figures and analyses shown above, (ii) perform a more rigorous statistical analysis comparing the distribution of English- vs non-English-language studies, and (iii) compare the species covered by English- vs non-English-language studies. We will then, finally, start writing a paper including all these exciting results!

2. Use of English-language and non-English-language references in national-level reports on biodiversity and its conservation

The translatE project also aims to understand language barriers to the application of English-language knowledge on biodiversity conservation. This second component thus tries to understand how decision-makers perceive language as a barrier to the use of science in their conservation decision making, by investigating the use of English- vs non-English-langauge literature in national-level reports on biodiversity conservation.

We have already recruited 23 collaborators ("country coordinators") from six major regions, who are enthusiastically helping us with this endeavour (Table 1). Tasks for this collaboration are threefold: (i) identifying national reports on biodiversity conservation based on the translatE selection criteria and list them; (ii) identifying the use of English language vs non-English language references cited in the report; and (iii) identifying the editor(s)/author(s) of the report selected by the translatE team, and ask them to do a short questionnaire survey on how they collected those references for the report (this may involve the translation of the survey and answers). We are seeing a great progress with many collaborators; 13 collaborators have already done the report listing and we even have

collected responses to the questionnaire in four countries (Paraguay, Brazil, Ukraine and Hungary- see Table 1).

Table 1. List of countries covered and their progress so far.

Region		Language	Listing reports	Questionnaire
Latin America	Argentina	Spanish	Done	Shared
Latin America	Paraguay	Spanish	Done	Completed
Latin America	Brazil	Portuguese	Done	Completed
Latin America	Chile	Spanish	Done	Shared
Latin America	Mexico	Spanish	Done	Shared
Latin America	Costa Rica	Spanish	Started	
Latin America	Guatemala	Spanish	Will start end of October	
East Asia	China	Simplified Chinese	Done	Shared
East Asia	Japan	Japanese	Started	
East Asia	South Korea	Korean	Started	
East Asia	Taiwan	traditional Chinese	Done	Shared
Western Europe	Germany	German	Done	Shared
Western Europe	Switzerland		Will start soon	
South Europe	Italy	Italian	Done	Shared
South Europe	Spain	Spanish	Started	
Eastern Europe	Romania	Romanian	Done	Shared
Eastern Europe	Ukraine	Ukrainian	Done	Completed
Eastern Europe	Hungary	Hungarian	Done	Completed
Northern Europe	Norway	Norwegian	Started	
Russia	Russia	Russian	Done	Shared
Middle East	Lebanon	French/Arabic	Accepted	
Africa	Mozambique	Portuguese	Started	

We are still recruiting collaborators to help us list national-level reports on biodiversity and its conservation mainly for countries in Africa and the Middle East, to investigate the number of references cited there, and do a questionnaire survey with the authors of the reports. If you are interested in becoming one or know of someone who would be keen, please visit our website (https://translatesciences.com/recruiting-collaborators-national-level-reports-on-biodiversity-conservation/) or reach out for further details (t.amano@uq.edu.au / v.berdejoespinola@uq.edu.au). Once again, in exchange for helping us with this project component, we offer co-authorship of the resulting paper of the analysis of the data collected.

3. Other news

- Tatsuya has given a keynote presentation titled "*Flying over the Tower of Babel: Implications of language barriers on shorebird conservation*" at the International Shorebirds Twitter Conference 2020 (#ISTC20). The presentation includes a part of our ongoing work led by Pablo

Negret and is now available in English (https://twitter.com/tatsuya_amano/status/1314098224190300160) and Japanese (https://twitter.com/tatsuya_amano/status/1314121742982422528). Please do have a look and let us know what you think.

Again, big thanks to everyone and stay safe!