

# Amount and quality of direct replications in experimental linguistic research

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## Abstract

The replication of research results and methods is central to science. A number of failed replication attempts in the field of experimental linguistics show that the field is not immune to challenges posed by the so-called replication crisis. To assess the amount and quality of replications in experimental linguistic research, we estimated replication rates for 98 journals and conducted a detailed analysis of 210 articles. Across representative experimental linguistic journals, we found a median replication rate of 1.6%. We related the amount of published replication studies to journal submission guidelines, open access publishing and journal impact factor. A detailed analysis of replication studies showed that roughly half of the articles mentioning the term “replicat\*” were indeed replication studies. Our sample contained only 8 direct replications. Although the overall numbers are very low, we found a slight increase of partial and conceptual replication studies in recent years.

**keywords:** replication, language, publishing guidelines, journal impact factor, open access

**data availability statement:** All data, analysis code and models used can be inspected at <https://osf.io/9ceas/>.

## Introduction

The replication of results is an integral part of cumulative experimental science (e.g., Campbell, 1969; Rosenthal, 1990; Zwaan et al., 2018). Yet, various scientific disciplines are currently facing what is often referred to as the “replication crisis,” a state of affairs that is characterized by an alarming amount of failed replication attempts (Fidler and Wilcox, 2018). Here, we define replications as studies that arrive at the same scientific conclusions as an initial study, collecting new data and completing new analyses by using the same methodology (see Barba, 2018 for a comprehensive overview of different terminological uses). Coordinated

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efforts to replicate published findings have uncovered surprisingly low rates of successful replications in fields such as psychology (Open Science Collaboration, 2015), economics (Camerer et al., 2016) and social sciences (Camerer et al., 2018). Researchers from these fields report low replication rates ranging from 0.13% in the education sciences to 1.6% in psychology publications (Makel et al., 2012; Makel and Plucker, 2014).

One driving factor of this lack of replicability is an asymmetric incentive system that rewards novel confirmatory findings over direct replications and null results. Replication studies are not very popular because the necessary time and resource investment are not appropriately rewarded in contemporary academic incentive systems (e.g., Koole and Lakens, 2012; Nosek et al., 2012). Both successful replications (Madden et al., 1995) and repeated failures to replicate (e.g., Doyen et al., 2012) are rarely published, and even if they are, they usually appear in less prestigious outlets than the original findings. These dynamics lead to an abundance of positive findings in the absence of possible conflicting negative evidence (see also e.g. Fanelli, 2010).

Experimental linguistics shares research practices that have been shown to decrease the replicability of findings. Thus, there are raising concerns about a similarly low number of replication studies conducted and published in this field (e.g. Marsden et al., 2018; Roettger and Baer-Henney, 2019). A number of failed replication attempts reported in various subfields of linguistics indicate that these concerns are warranted (e.g. in language comprehension: Papesch, 2015; predictive processing: Nieuwland et al., 2018; among others: Chen, 2007; Stack et al., 2018; Westbury, 2018). In order to thoroughly understand and be able to address this problem, it is important to assess the number of replication attempts in the field of experimental linguistics and their contributing factors.

One subfield of experimental linguistics, second language research, has already been systematically reviewed. Marsden et al. (2018) coded 67 self-labeled L2 replication studies for 136 characteristics. Their results indicate that for every 400 articles, only one replication study is published translating to a replication rate of about 0.25%. Their sample did not include any direct replication attempts. Changes made to the initial study were very diverse and numerous. These results motivate to assess replication rates and contributing factors for the more general field of experimental linguistics.

The present study assessed the frequency and typology of replication studies that have been published in a representative sample of experimental linguistic journals from 1988 to 2020. Our study aimed at answering two main questions: How many direct replications are published in experimental linguistics? Are there factors that affect the replication rates that are either found at the journal level (e.g. journal policies, open access, journal impact factor, etc.) or at the study level (e.g. composition of authors, investigated language, etc.)? The study consisted of two analyses: First, we assessed the rate of mentioning the term replication (search string: replicat\*) across 100 linguistic journals. Second, we categorized the type of replication studies (direct, partial, conceptual) in a subset of twenty journals. We then related their prevalence to factors like the years of publication, and the citations of both initial and replication study.

## How often do journals mention the term replication?

The key dependent variable of the first part of this study was the rate of replication mention for journals relevant to the field of experimental linguistics.

### *Data availability*

The article counts for all journals in the sample and calculated rates of replication mention can be inspected at <https://osf.io/yefr8/>. The journals coded for the factors journal policy, journal impact factors and open access publishing can be retrieved at <https://osf.io/rukc7/>.

### *Material and methods*

The study design has been preregistered at 2021-03-08 and can be inspected at <https://osf.io/9ceas/>.

In order to determine the rates of replication mention for individual journals, we drew on a method introduced by Makel et al. (2012). First, a sample of 100 journals relevant to the field of experimental linguistics has been identified by making use of the search engine “Web of Science” (<https://webofknowledge.com>) at 2021-03-03. We restricted the search results to journals in the web of science category “Linguistics” which had at least 100 articles published and a high ratio of articles containing the term “experiment\*” in title, abstract or keywords. All articles categorized as written in English between 1945-2020 were taken into account. We selected a subset of those 100 journals that had the highest ratio of mentioning the term “experiment\*” in their articles. This was done to make sure that the subset comprised journals that are relevant for experimental linguistics research.

The ratio between overall number of articles and those articles mentioning the term “experiment\*” ranged between 6.1 and 60.3 (with a median of 11.5). Two journals, namely “Language and Cognitive Processes” and “Language, Cognition and Neuroscience” had to be excluded because it turned out during analysis that both journals have been renamed in 2013 and that they have already been included in our sample under the new name. Our final sample thus included only 98 journals. The full sample of journals can be inspected at <https://osf.io/q2e9k/> or in the appendix of this article. Albeit a rough proxy, this procedure helped us identifying journals relevant to the field of experimental linguistics.

After journal selection, we obtained the total count of articles containing the search term “replicat\*” in title, abstract or keywords for each journal via Web of Science search. Following the method presented by Makel et al. (2012), the rates of replication mention are calculated by dividing the number of articles containing the term “replicat\*” by the total number of articles for each journal. As we were only interested in experimental linguistic studies, we only included articles containing the search term “experiment\*” in this formula.

Replication mentions were then related to three journal properties: Journal policies with regards to replication studies, journal impact factor and whether the journal is an open access publisher or not. To gain an understanding of the journal policies with regards to replication studies, we examined the journals’

submission guidelines adopting a method suggested by Martin and Clarke (2017). They grouped psychology journals into four categories dependent on whether they (explicitly or implicitly) encourage replication studies or not in their “instructions to authors” and “aims and scope” sections on the journal websites. For our analysis, we only distinguished between those journals explicitly encouraging replication studies and those that do not. We extracted journal impact factors via Journal Citation Reports (<https://jcr.clarivate.com>).<sup>1</sup> Whether journals offered an open access publication or not was assessed via Web of Science. We distinguished between three categories: journals which are listed in the Directory of Open Access Journals (DOAJ) (“DOAJ gold”), journals with some articles being published as open access articles (“partial”) and journals with no option to publish open access (“no”). We grouped journals with partial or no option to publish open access together for analysis resulting in a binary categorization of open access.

### *Results*

Out of the 51272 articles in our sample, 8006 mentioned the term ‘experiment\*’ in title, abstract, or keywords and were thus treated as articles presenting an experimental investigation. Out of these articles, 347 contained the term “replicat\*” suggesting 4.3% of all experimental articles to be replication studies.

The distribution of the rate of replication mention substantially varies across journals ranging from 0 to 12.82%. Overall, almost half of all journals ( $n = 43$ ) did not mention the term in any of their articles. The median mention rate across journals is 1.6 ( $SD = 3.3$ ). Figure X illustrates the variation across those journals that exhibited at least one mention of the term.

Following preregistered protocol, we statistically estimated the rate of replication mention as predicted relative to the following factors: journal impact factors (continuous), open access (binary: open access journal or not), and replication policies (binary: either explicitly encourage or not). We used Bayesian parameter estimation based on generalized linear regression models with a binomial link function. The model was fitted to the proportion of replication mentions per journal using the R package *brms* (Bürkner, 2016). We used weakly informative normal priors centered on 0 ( $sd = 2.5$ ) for the intercept and Cauchy priors centered on zero ( $scale = 2.5$ ) for all population-level regression coefficients. These priors are what is referred to as regularizing (Gelman et al., 2008), i.e. our prior assumption is agnostic as to whether the predictors affect the dependent variable, thus making our model conservative with regards to the predictors under investigation. Four sampling chains with 2000 iterations each have been run for each model, with a warm-up period of 1000 iterations. For relevant predictor levels and contrasts between predictor levels, we report the posterior probability for the rate of replication mention. We summarize these distributions by reporting the posterior mean and the 95% credible intervals (calculated as

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<sup>1</sup>The 2019 journal impact factors are calculated by dividing the citations in 2019 to items published in 2017 and 2018 by the total number of citable items in 2017 and 2018.

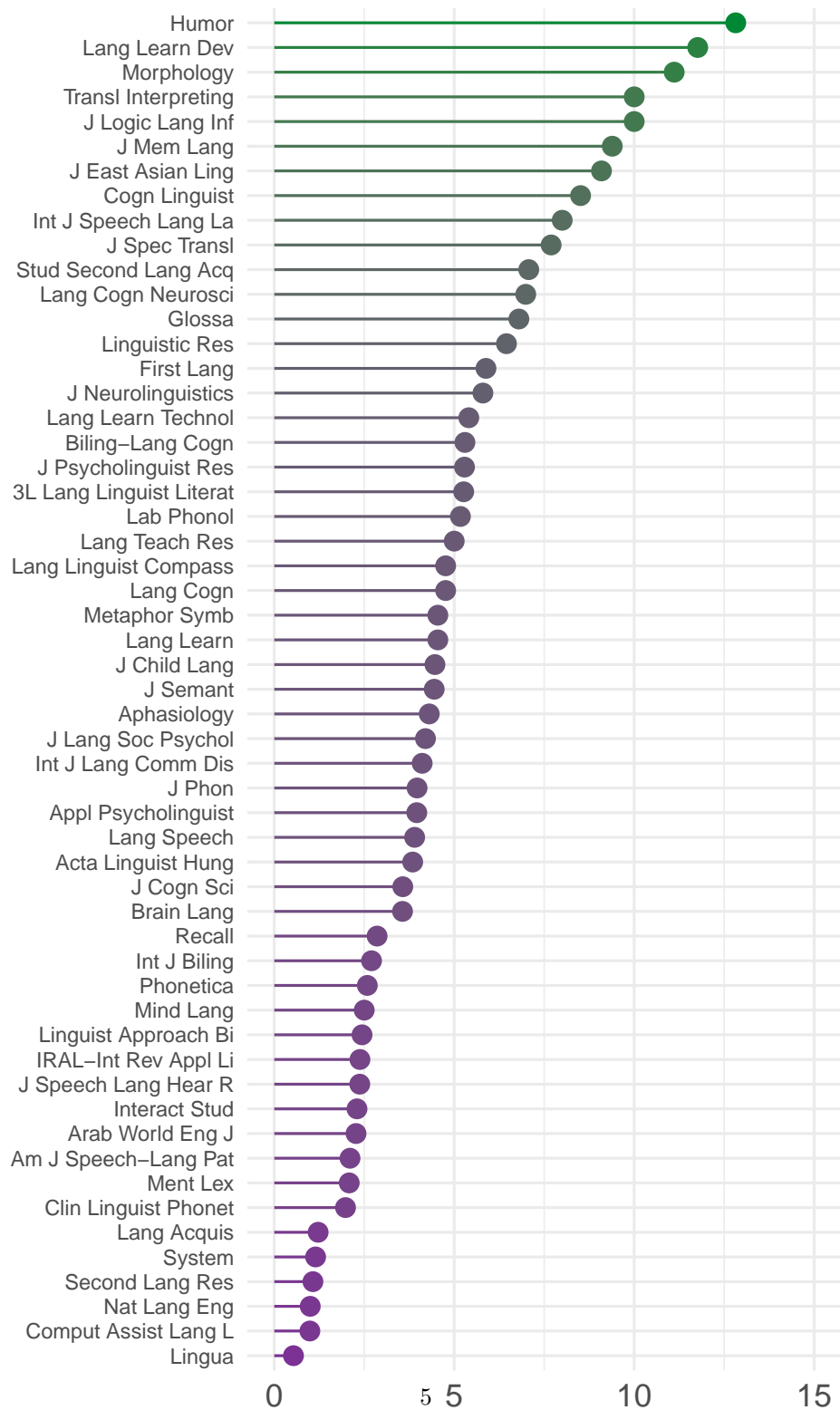


Figure 1: Variation in rate of replication mention across those journals that exhibited at least one mention of the term.

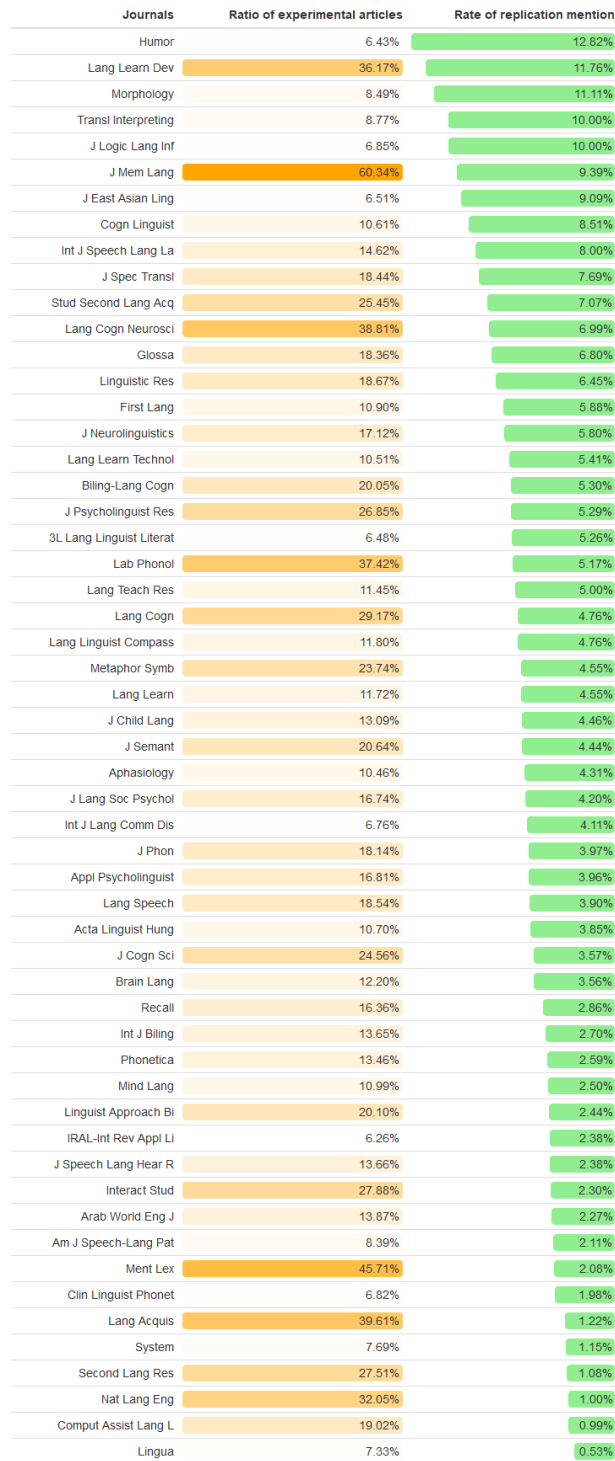


Figure 2: Variation in rate of replication mention across those journals that exhibited at least one mention of the term.

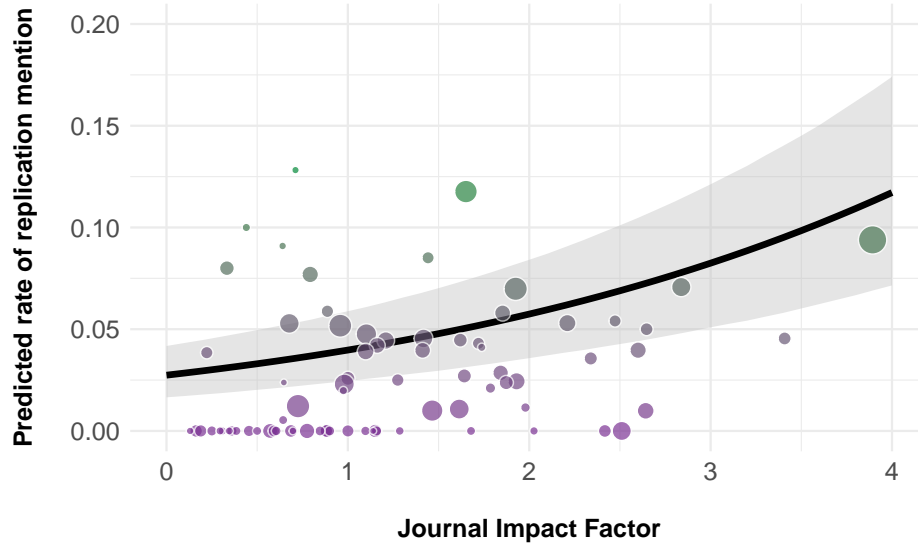


Figure 3: Rate of mentioning the term ‘replicat\*’ across sampled journals plotted against their journal impact factor. Each point represents one journal. Point size indicates the proportion of papers categorized as experimental (i.e. larger points indicate journals with more experimental articles). Line and shading indicate model predictions and 95% credible intervals.

the highest posterior density interval).

The model estimates the proportion of replication mentions as 2.7% [1.7, 4.2] at a journal impact factor of 0 and estimates an increase of the proportion with each integer unit of journal impact factor (log odds = 0.39 [0.29, 0.49]). Figure X illustrates this relationship.

However, further explorations indicate that journal impact factor is highly correlated with the number of experimental studies reported in a journal (Spearman correlation = 0.43). Given this correlation, it remains unclear if the term “replicat\*” is used more often in high impact journals or simply more common in journals that generally publish more experimental studies.

The model estimates the impact of whether the journal allows for open access publishing or not and whether replications are explicitly encouraged or not both as positive, i.e. the term replication is mentioned more often in both open access journals and journals that explicitly encourage direct replications. However, the uncertainty around these estimates is substantial (open access: 0.41 [-0.41, 1.14]; policy: 0.24 [-0.27, 0.72]) although not surprising given the small number of journals that explicitly encourage direct replications (2 out of 98), and the small number of open access journals (11 out of 98).

### Discussion

The articles of almost half of all journals in our sample ( $n = 43$ ) did not mention the term ‘replicat\*’ at all. The maximum rate of replication mention is 12.82%, but the median mention rate lies substantially lower at 1.6 (SD = 3.3).

This rate is comparable to the 1.6% that Makel et al. (2012) have reported in their study on psychology journals.

Our preregistered model estimates an increase in proportion of mentioning the term 'replicat\*' with increasing journal impact factor. But according to further explorations, this effect is likely due to the higher number of experimental studies published in journals with higher impact factor. This correlation makes sense in our sample because experimental linguistic articles are often associated with psychology adjacent fields, possibly attracting a broader audience and being cited more widely than articles belonging to other subfields of linguistics. Given this correlation, we cannot draw any conclusions on the role of journal impact factors with regards to publishing replication studies.

The role of open access publishing options and journal policies is clearer: According to our model, the term 'replicat\*' is mentioned more often in both open access journals and journals that explicitly encourage direct replications on their websites. Although the uncertainty around these estimates is substantial, we can draw the tentative conclusion that journals which support open science by offering open access publishing and by explicitly encouraging the submission of replication studies, also publish replication studies more often than other journals.

### **How many of these mentions are actual replications?**

The second part of the study aimed at obtaining a clearer picture about what types of replication studies are published and whether direct replications are becoming more frequent over time. Because the term "replication" is commonly used in ambiguous ways, the articles that contained the search term "replicat\*" required further analysis to determine whether the articles in question indeed reported a replication study or used the term in a different way.

#### *Data availability*

The full list of coded articles can be obtained at <https://osf.io/4rtvh/>.

#### *Material and methods*

From the superset of 100 journals obtained above, the first 20 journals (i.e. those journals with the highest proportion of experimental studies) were selected for a more detailed analysis while excluding journals for which less than 2 hits (TS=(replicat\*)) could be obtained (see at <https://osf.io/f3yp8/> for a list of article counts per journal). Because of the skewed distribution of our sample (114 hits for Journal of Memory and Language, and less than 40 for all other journals), we randomly selected 50 out of the 114 articles for the Journal of Memory and Language in order to achieve a more balanced distribution of papers across journals (see at <https://osf.io/6vfpe/> for details). The sampling procedure above resulted in 210 possible self-labeled replication studies.

We identified whether the article in question indeed presented a replication study or not. The relevant parts of the papers were title and abstract of the



paper, sentences around occurrences of the search term “replicat\*” as well as the paragraph before the Methods section and the first paragraph of the Discussion section (following the procedure specified by Makel et al. (2016)). If the authors explicitly claimed that (one of) their research aim(s) was to replicate the result or methods of an initial study, this article was treated as a replication and was submitted to further analysis according to the preregistered coding scheme which can be inspected at <https://osf.io/ct2xj/>.

When extracting number and types of changes made to the initial study, we assumed that the authors of a replication study did not make any drastic changes *without* reporting them. The replication studies were classified according to three types: direct replication (0 changes), partial replication (1 change) and conceptual replication (2 or more changes), following Marsden et al. (2018). We noted the nature of the change as one of the following categories (yes/no): experimental paradigm, sample, materials/experimental set-up, dependent variable, independent variable, and control. We also noted the language under investigation. The information on whether the article was published open access as well as citation counts and years of publication for both studies were obtained from Web of Science. An author overlap was attested when at least one author was a (co-)author on both articles. When coding the articles, some cases turned up that could not be anticipated when the study was preregistered. When several self-labeled replication studies were mentioned in one article, we chose the first mentioned study for analysis. If there were one independent, but also one or more inner-paper replications, i.e. experiments that replicated previously obtained results from the same article, we chose the independent study for analysis.

## Results

Out of the 210 articles in the subsample, 200 (95.2%) indeed presented experimental linguistics research. The remaining 10 (4.8%) have not been experimental studies, but rather commented and reflected on the field or presented research using computer simulations and modeling techniques. 116 were self-claimed replications according to our criteria. The remaining 94 mentions were articles that mentioned the term in other contexts or studies that did not specify the concrete aim of replicating an initial study’s design or results. These articles that did not qualify as replication studies according to our predefined criteria could also include articles which mentioned that their results “replicated” the results of one or more previous studies using the term in a very broad sense. In these cases, it was usually not clear which specific research methods or aims from previous studies should be replicated. We thus decided to handle these cases not as replication studies. Out of the replication studies we identified, we categorized 66 (56.9%) as conceptual, 42 (36.2%) as partial, and only 8 (6.9%) as direct replications.

About one third (31.6%) of the replications were published in the scope of the same paper as the initial study. Publishing multiple experiments within one article and replicating one’s own previously obtained results thus seems to be good practice in the field of experimental linguistics.

### Number of replication types from 1988–2020

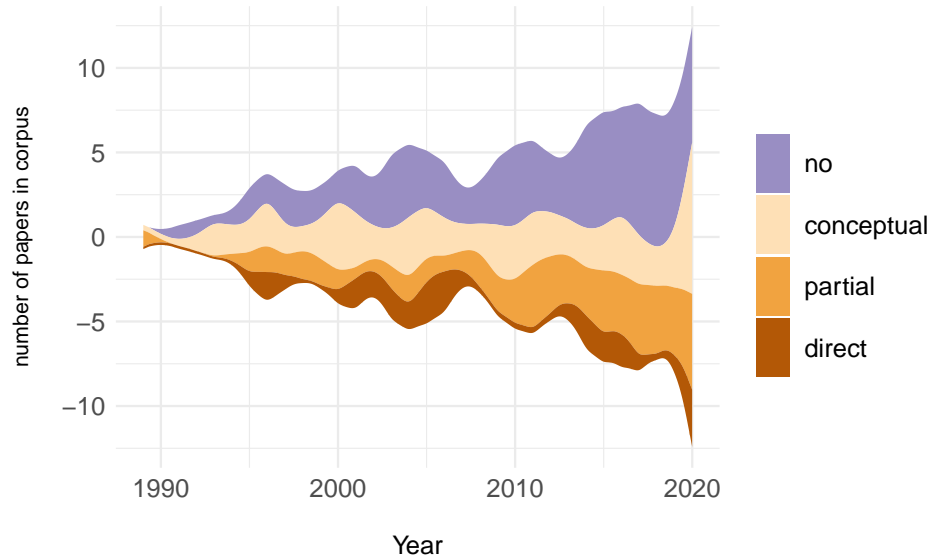


Figure 4: Development of amount of replication studies published over time.

Looking closer at direct replications, 3 studies were independent studies, i.e. there was no overlap between authors of the initial study and the replication study. Out of these independent direct replication studies, 2 were self-labeled as successful replications. In other words, our sample included only one failed independent and direct replication attempt.

Figure X illustrates the development of replication studies across the time span of our sample. While the overall number of studies increased over the years, the proportion of direct replications remained stable at best. However, it seems as if there is an increasing number of partial and conceptual replications that was published within the last few years.<sup>2</sup>

## pdf

## 2

One possible reason for the fact that (direct) replication rates are not increasing for the field according to our analysis could be that experimental linguistics predominantly replicates experimental findings across languages, making the replication studies conducted by definition only partial replications. However,

<sup>2</sup>Given the small number of direct replications in our sample, both a descriptive assessment and an inferential assessment as preregistered are very uninformative. The reader is directed to the supplementary materials, if they are interested in the model outputs of the preregistered analysis.

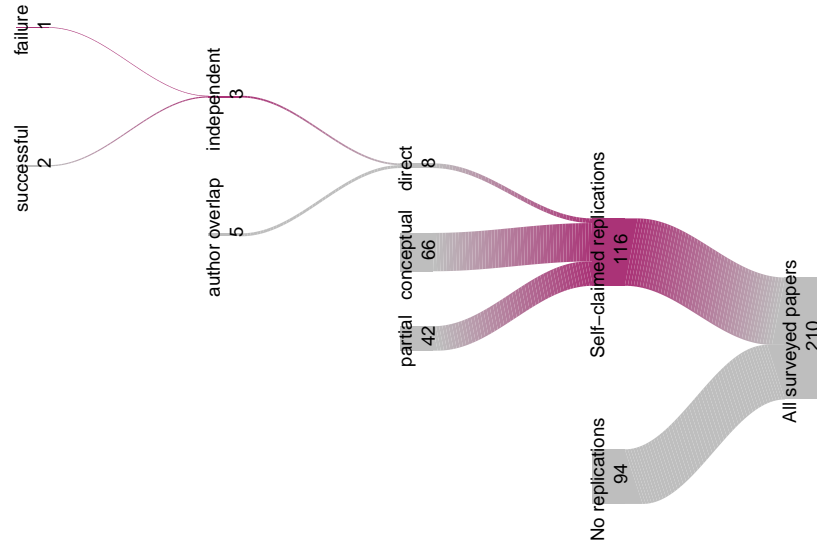


Figure 5: Quantity and quality of replications in experimental linguistics.

only one quarter of replications targeted a different language than the initial study (24.1%). The majority of replication efforts were conducted within the same language as the initial study. In fact, 67.2% of all replication studies in our sample had one variety of English as the main language of investigation either in the replication or in the corresponding initial study.

The median number of years between an initial and a replication study is 7 years. Initial studies were on average 41.6 times cited before a replication was published which amounts to an average yearly citation rate of 5.9 citations. This average citation rate is well above the impact factor of journals in publishing experimental studies in linguistics (median journal impact factor in superset: 1.1). However, replications were on average 17 times cited which only amounts to an average yearly citation rate (calculated up to the time of analysis) of 0.6 citations.

#### *Case study of Journal of Memory and Language*

When having a closer look at the Journal of Memory and Language which accounts for the largest part of our sample compared to other journals and is the journal with the highest impact factor (3.9), we find that 34 (68%) of the 50 studies in our sample are replication studies. Of these, 15 (44.1%) are conceptual, 16 (47.1%) are partial, and 3 (8.8%) are direct replication studies which is in line with the results for the whole sample. When excluding for studies with author overlap and only taking into account the independent direct replication studies, 2 of the studies published in Journal of Memory and Language were independent direct replication studies (one of which was successful).

Figure X shows the development of publications in the Journal of Memory

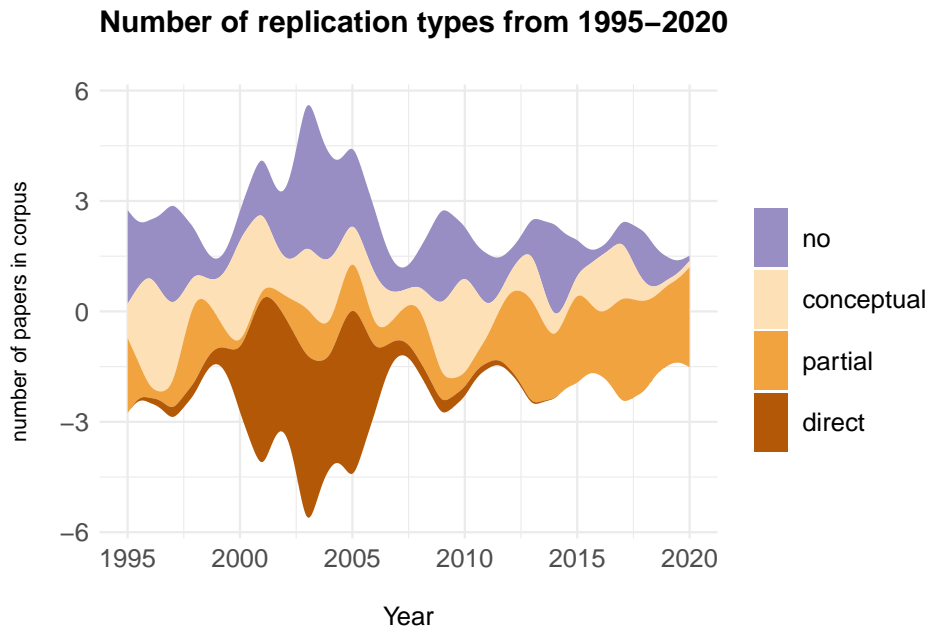


Figure 6: Development of amount of replication studies published over time in the Journal of Memory and Language.

and Language over time. While there was a peak of direct replication studies in 2003, the numbers decreased again after that year. In 2020 no direct replication studies have been published in this journal at all. However, the proportion of partial replications seems to be increasing over the last few years (although we are talking of very small numbers here).

### *Discussion*

Only 58% of the experimental studies in our sample were replication studies according to our criteria. Out of these, 66 were categorized as conceptual, 42 as partial, and only 8 as direct replications which amounts to a direct replication rate of 6.9% in our sample. This clearly indicates that replication attempts, and especially direct replication attempts, are very rare in the experimental linguistics literature - a fact that compares to other research fields.

The development of publications over time shows that the overall number of studies increased, but the proportions of direct replication studies remained stable. However, we can speculate that there is an increasing number of partial and conceptual replications that have been published within the last few years.

Our analysis of the years between the publication of the initial and replication study and the citation counts of both is in line with Marsden et al. (2018) who investigated the prevalence of replication studies across second language research. They found that replication studies were on average conducted after more than six years and after over a hundred citations of the original study and concluded

that replications are either only performed or only published after the original study had already substantially impacted the field. Our findings support this hypothesis from the point of view of experimental linguistics research: Replication studies are published after a median of 7 years and after 41.6 citations of the initial study. The average drop in citations for replication studies compared to the initial study is in line with the lack of perceived prestige of replication studies (e.g., Koole and Lakens, 2012; Nosek et al., 2012).

The findings for the journal with the highest impact factor from our sample, *Journal of Memory and Language*, are comparable to the full sample. The trend over the last few years indicates that partial replication studies are more and more being published, but direct replication studies are unfortunately still seldomly conducted and/or published.

## General discussion

The overall picture our analyses draw for replication attempts in the field of experimental linguistics is that they are far too uncommon. This relates to other fields of research for which a lack of replication studies has been attested (Camerer et al., 2018, 2016; Makel et al., 2012; Makel and Plucker, 2014; Open Science Collaboration, 2015). The median rate of replication mention of 1.6 (SD = 3.3) we find for experimental linguistics is in line with the rates found for psychology, social sciences and economics to name just a few.

The asymmetric incentive system of publication does not reward replication studies and they are also not perceived as being prestigious (e.g., Koole and Lakens, 2012; Nosek et al., 2012). This is reflected in the citation counts which are at a median of ... for the replications in our sample and at a median of ... for the initial studies in our sample. The low rates of replications in the field of experimental linguistics might be due to replication studies not being conducted, but they might also be due to replication studies not being *published*.

A reason for this could be that journal guidelines usually do not encourage to submit replication studies. But this policy is related to the amount of replication studies published in a journal. We thus suggest in support of Marsden et al. (2018) and Martin and Clarke (2017) that journals should accept replication studies more often and should also make more explicit and public that they encourage their submission. Journals do not need to fear any negative consequences like a loss of reputation because our results indicate that journals which frequently mention the term 'replicat\*' in fact have a proportionally high impact factor. This effect is probably only correlational and not a causation, but still indicates that replication studies are frequently published in journals with high impact factors. The DOAJ gold standard with respect to open access publishing is also positively related to publishing replication studies. This might be due to journals which support open access are also more open to replication studies, both being important tools for the open science movement.

The development of publications over time does not give much cause for hope: While the total amount of studies published increased over the last few years, the amount of direct replications remained stable at best. However, we can speculate

that there is an increasing number of partial and conceptual replications that have been published within the last few years.

On the other hand the increasing amount of reproducibility initiatives founded in the field during the last few years give hope that the situation is likely going to change in the near future. e.g. many babies, many speeches etc.

#### *Caveats*

The procedure used here is necessarily only a rough proxy of relevant experimental linguistic articles published in the field and several articles might thus have been overlooked and not been included in the analysis. The articles have been coded by only a single person who was not an expert in this field.

## Appendix

Table 1: The full sample of journals sorted by their ratio of experimental linguistics articles.

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
JOURNAL OF MEMORY AND LANGUAGE	2,012	1,214	60.34
LANGUAGE AND COGNITIVE PROCESSES	783	399	50.96
MENTAL LEXICON	105	48	45.71
LANGUAGE ACQUISITION	207	82	39.61

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
LANGUAGE COGNITION AND NEUROSCIENCE	590	229	38.81
LABORATORY PHONOLOGY	155	58	37.42
LANGUAGE LEARNING AND DEVELOPMENT	141	51	36.17
NATURAL LANGUAGE ENGINEERING	312	100	32.05
LECTURE NOTES IN COMPUTER SCIENCE	150	46	30.67
LANGUAGE AND COGNITION	144	42	29.17
INTERACTION STUDIES	312	87	27.88
SECOND LANGUAGE RESEARCH	338	93	27.51

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
JOURNAL OF PSY-CHOLIN-GUISTIC RE-SEARCH	1,691	454	26.85
STUDIES IN SECOND LAN-GUAGE ACQUI-SITION	389	99	25.45
COMPUTATIONAL LINGUIS-TICS	521	130	24.95
JOURNAL OF COG-NITIVE SCIENCE	114	28	24.56
METAPHOR AND SYMBOL	278	66	23.74
LECTURE NOTES IN ARTIFI-CIAL INTELLI-GENCE	113	26	23.01
JOURNAL OF SE-MANTICS	218	45	20.64
LINGUISTIC AP-PROACHES TO BILIN-GUALISM	204	41	20.10



Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
BILINGUALISM LAN- GUAGE AND COG- NITION	753	151	20.05
COMPUTER ASSISTED LAN- GUAGE LEARN- ING	531	101	19.02
LINGUISTIC RE- SEARCH	166	31	18.67
LANGUAGE AND SPEECH	1,521	282	18.54
JOURNAL OF SPE- CIALISED TRANSLA- TION	141	26	18.44
GLOSSA A JOURNAL OF GENERAL LINGUIS- TICS	561	103	18.36
JOURNAL OF PHO- NETICS	1,389	252	18.14
JOURNAL OF NEU- ROLIN- GUISTICS	806	138	17.12

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
APPLIED PSY-CHOLIN-GUISTICS	1,202	202	16.81
JOURNAL OF LAN-GUAGE AND SOCIAL PSYCHOL-OGY	711	119	16.74
RECALL	214	35	16.36
PHONOLOGY	190	31	16.32
INTERPRETING	131	20	15.27
EURASIAN JOURNAL OF APPLIED LINGUIS-TICS	115	17	14.78
INTERNATIONAL JOURNAL OF SPEECH LAN-GUAGE AND THE LAW	171	25	14.62
JOURNAL OF LAN-GUAGE AND EDU-CATION	145	21	14.48
LINGUISTICS VAN-GUARD	146	21	14.38

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
ARAB WORLD ENGLISH JOURNAL	952	132	13.87
JOURNAL OF SPEECH LANGUAGE AND HEARING RESEARCH	3,389	463	13.66
INTERNATIONAL JOURNAL OF BILINGUALISM	542	74	13.65
PHONETICA	862	116	13.46
JOURNAL OF CHILD LANGUAGE	1,711	224	13.09
PROCESAMIENTO DEL LENGUAJE NATURAL	107	14	13.08
APPLIED LINGUISTICS RESEARCH JOURNAL	177	23	12.99
LITERARY AND LINGUISTIC COMPUTING	247	32	12.96

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
NATURAL LAN- GUAGE SEMAN- TICS	145	18	12.41
JOURNAL OF QUAN- TITATIVE LINGUIS- TICS	258	32	12.40
BRAIN AND LAN- GUAGE	3,680	449	12.20
LANGUAGE AND LIN- GUISTICS COMPASS	178	21	11.80
LANGUAGE LEARN- ING	1,314	154	11.72
CORPUS LINGUIS- TICS AND LINGUIS- TIC THEORY	156	18	11.54
REVIEW OF COG- NITIVE LINGUIS- TICS	182	21	11.54
LANGUAGE TEACH- ING RE- SEARCH	524	60	11.45

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
INTERPRETER AND TRANSLATOR TRAINER	231	26	11.26
POZNAN STUDIES IN CONTEMPORARY LINGUISTICS	322	36	11.18
MIND LANGUAGE	728	80	10.99
FIRST LANGUAGE	312	34	10.90
PRAGMATICS COGNITION	193	21	10.88
ACTA LINGUISTICA HUNGARICA	243	26	10.70
SYNTAX A JOURNAL OF THEORETICAL EXPERIMENTAL AND INTERDISCIPLINARY RESEARCH	150	16	10.67

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
COGNITIVE LINGUISTICS	443	47	10.61
JOURNAL OF RESEARCH IN APPLIED LINGUISTICS	283	30	10.60
LANGUAGE LEARNING TECHNOLOGY	352	37	10.51
APHASIOLOGY	1,999	209	10.46
DIGITAL SCHOLARSHIP IN THE HUMANITIES	389	38	9.77
PROBUS	157	15	9.55
INNOVATION IN LANGUAGE LEARNING AND TEACHING	168	16	9.52
INTERNATIONAL JOURNAL OF ENGLISH LINGUISTICS	786	71	9.03

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
TRANSLATION INTER- PRETING THE INTERNA- TIONAL JOURNAL OF TRANSLA- TION AND INTER- PRETING	114	10	8.77
ACROSS LAN- GUAGES AND CUL- TURES	164	14	8.54
MORPHOLOGY	106	9	8.49
AMERICAN JOURNAL OF SPEECH LAN- GUAGE PATHOL- OGY	1,132	95	8.39
REVUE ROUMAINE DE LINGUIS- TIQUE ROMA- NIAN REVIEW OF LIN- GUISTICS	205	17	8.29

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
INTERCULTURAL PRAGMATICS	245	20	8.16
CHILD LANGUAGE TEACHING THERAPY	249	20	8.03
LANGUAGE AWARENESS	262	21	8.02
GESTURE	143	11	7.69
JOURNAL OF THE INTERNATIONAL PHONETIC ASSOCIATION	221	17	7.69
SYSTEM	1,131	87	7.69
METAPHOR AND SYMBOLIC ACTIVITY	134	10	7.46
IBERICA	203	15	7.39
LINGUA	2,551	187	7.33
ANNUAL REVIEW OF APPLIED LINGUISTICS	151	11	7.28



Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
LINGUISTICA ANTVERPIENSIA NEW SERIES THEMES IN TRANSLATION STUDIES	138	10	7.25
TERMINOLOGY	127	9	7.09
ANNUAL REVIEW OF LINGUISTICS	101	7	6.93
JOURNAL OF LOGIC LANGUAGE AND INFORMATION	146	10	6.85
JOURNAL OF FRENCH LANGUAGE STUDIES	117	8	6.84
CLINICAL LINGUISTICS PHONETICS	1,480	101	6.82
LANGUAGE AND LINGUISTICS	281	19	6.76

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
INTERNATIONAL JOURNAL OF LANGUAGE COMMUNICATION DISORDERS	1,080	73	6.76
NORDIC JOURNAL OF LINGUISTICS	150	10	6.67
JOURNAL OF EAST ASIAN LINGUISTICS	338	22	6.51
LANGUAGE AND LITERATURE	246	16	6.50
3L LANGUAGE LINGUISTICS LITERATURE THE SOUTH-EAST ASIAN JOURNAL OF ENGLISH LANGUAGE STUDIES	293	19	6.48

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
BABEL REVUE INTERNATIONALE DE LA TRADUC- TION INTERNATIONAL JOURNAL OF TRANSLA- TION	264	17	6.44
HUMOR INTERNATIONAL JOURNAL OF HUMOR RE- SEARCH	607	39	6.43
INTERNATIONAL JOURNAL OF CORPUS LINGUIS- TICS	239	15	6.28
IRAL INTERNATIONAL REVIEW OF APPLIED LINGUIS- TICS IN LAN- GUAGE TEACH- ING	671	42	6.26

Journal	Total Number of Articles	Experimental Linguistics Articles	Ratio of Experimental Linguistics Articles in %
INTERNATIONAL JOURNAL OF APPLIED LINGUISTICS	163	10	6.13

## References

- Barba, L.A., 2018. Terminologies for Reproducible Research.
- Bürkner, P.-C., 2016. Brms: An R package for Bayesian multilevel models using Stan. *Journal of Statistical Software* 80, 1–28.
- Camerer, C.F., Dreber, A., Forsell, E., Ho, T.-H., Huber, J., Johannesson, M., Kirchler, M., Almenberg, J., Altmejd, A., Chan, T., Heikensten, E., Holzmeister, F., Imai, T., Isaksson, S., Nave, G., Pfeiffer, T., Razen, M., Wu, H., 2016. Evaluating replicability of laboratory experiments in economics. *Science* 351, 1433–1436. doi:10.1126/science.aaf0918
- Camerer, C.F., Dreber, A., Holzmeister, F., Ho, T.-H., Huber, J., Johannesson, M., Kirchler, M., Nave, G., Nosek, B.A., Pfeiffer, T., Altmejd, A., Buttrick, N., Chan, T., Chen, Y., Forsell, E., Gampa, A., Heikensten, E., Hummer, L., Imai, T., Isaksson, S., Manfredi, D., Rose, J., Wagenmakers, E.-J., Wu, H., 2018. Evaluating the replicability of social science experiments in Nature and Science between 2010 and 2015. *Nature* 2, 637–644. doi:10.1038/s41562-018-0399-z
- Campbell, D.T., 1969. Reforms as experiments. *American Psychologist* 24, 409.
- Chen, J.-Y., 2007. Do Chinese and English speakers think about time differently? Failure of replicating Boroditsky (2001). *Cognition* 104, 427–436.
- Doyen, S., Klein, O., Pichon, C.-L., Cleeremans, A., 2012. Behavioral priming: It’s all in the mind, but whose mind? *PloS one* 7, e29081.
- Fanelli, D., 2010. Do pressures to publish increase scientists’ bias? An empirical support from US states data. *PLoS ONE* 5, e10271. doi:10.1371/journal.pone.0010271
- Fidler, F., Wilcox, J., 2018. Reproducibility of scientific results.
- Gelman, A., Jakulin, A., Pittau, M.G., Su, Y.-S., others, 2008. A weakly informative default prior distribution for logistic and other regression models. *The Annals of Applied Statistics* 2, 1360–1383.
- Koole, S.L., Lakens, D., 2012. Rewarding replications: A sure and simple way to improve psychological science. *Perspectives on Psychological Science* 7, 608–614.

- Madden, C.S., Easley, R.W., Dunn, M.G., 1995. How journal editors view replication research. *Journal of Advertising* 24, 77–87.
- Makel, M.C., Plucker, J.A., 2014. Facts are more important than novelty: Replication in the education sciences. *Educational Researcher* 43, 304–316.
- Makel, M.C., Plucker, J.A., Freeman, J., Lombardi, A., Simonsen, B., Coyne, M., 2016. Replication of Special Education Research: Necessary but Far Too Rare. *Remedial and Special Education* 37, 205–212.
- Makel, M.C., Plucker, J.A., Hegarty, B., 2012. Replications in psychology research: How often do they really occur? *Perspectives on Psychological Science* 7, 537–542.
- Marsden, E., Morgan-Short, K., Thompson, S., Abugaber, D., 2018. Replication in Second Language Research: Narrative and Systematic Reviews and Recommendations for the Field. *Language Learning* 68, 321–391. doi:gc3h3b
- Martin, G.N., Clarke, R.M., 2017. Are Psychology Journals Anti-replication? A Snapshot of Editorial Practices. *Frontiers in Psychology* 8. doi:10.3389/fpsyg.2017.00523
- Nieuwland, M.S., Politzer-Ahles, S., Heyselaar, E., Segaert, K., Darley, E., Kazanina, N., Zu Wolfsturn, S.V.G., Bartolozzi, F., Kogan, V., Ito, A., Mézière, D., Barr, D.J., Rousselet, G.A., Ferguson, H.J., Bush-Moreno, S., Fu, X., Tuomainen, J., Kulakova, E., Husband, M.E., Donaldson, D.I., Kohút, Z., Rueschemeyer, S.-A., Huettig, F., 2018. Large-scale replication study reveals a limit on probabilistic prediction in language comprehension. *eLife* 7, e33468. doi:10.7554/eLife.33468.001
- Nosek, B.A., Spies, J.R., Motyl, M., 2012. Scientific utopia II. Restructuring incentives and practices to promote truth over publishability. *Perspectives on Psychological Science* 7, 615–631.
- Open Science Collaboration, 2015. Estimating the reproducibility of psychological science. *Science* 349. doi:10.1126/science.aac4716
- Papesh, M.H., 2015. Just out of reach: On the reliability of the action-sentence compatibility effect. *Journal of Experimental Psychology: General* 144, e116–e141. doi:10.1037/xge0000125
- Roettger, T.B., Baer-Henney, D., 2019. Toward a replication culture: Speech production research in the classroom. *Phonological Data and Analysis* 1, 1–23.
- Rosenthal, R., 1990. Replication in behavioral research. *Journal of Social Behavior and Personality* 5, 1.
- Stack, C.M.H., James, A.N., Watson, D.G., 2018. A failure to replicate rapid syntactic adaptation in comprehension. *Memory & Cognition* 46, 864–877. doi:10.3758/s13421-018-0808-6
- Westbury, C., 2018. Implicit sound symbolism effect in lexical access, revisited: A requiem for the interference task paradigm. *Journal of Articles in Support of the Null Hypothesis* 15, 1–12.
- Zwaan, R.A., Etz, A., Lucas, R.E., Donnellan, M.B., 2018. Making replication mainstream. *Behavioral and Brain Sciences* 41, E120. doi:10.1017/S0140525X17001972